INSTRUCTION BOOK

AIR COOLED RF LOAD RESISTOR
MODEL 8578A, 8578B

Instruction Book Part Number 920-8578AS Rev. D

Safety Precautions

The following are general safety precautions that are not necessarily related to any specific part or procedure, and do not necessarily appear elsewhere in this publication. These precautions must be thoroughly understood and apply to all phases of operation and maintenance.

WARNING

Keep Away From Live Circuits

Operating Personnel must at all times observe general safety precautions. Do not replace components or make adjustments to the inside of the test equipment with the high voltage supply turned on. To avoid casualties, always remove power.

WARNING

Shock Hazard

Do not attempt to remove the RF transmission line while RF power is present.

WARNING

Do Not Service Or Adjust Alone

Under no circumstances should any person reach into an enclosure for the purpose of service or adjustment of equipment except in the presence of someone who is capable of rendering aid.

WARNING

Safety Earth Ground

An uniterruptible earth safety ground must be supplied from the main power source to test instruments. Grounding one conductor of a two conductor power cable is not sufficient protection. Serious injury or death can occur if this grounding is not properly supplied.

WARNING

Resuscitation

Personnel working with or near high voltages should be familiar with modern methods of resuscitation.

WARNING

Remove Power

Observe general safety precautions. Do not open the instrument with the power on.

Safety Symbols

WARNING

Warning notes call attention to a procedure, which if not correctly performed, could result in personal injury.

CAUTION

Caution notes call attention to a procedure, which if not correctly performed, could result in damage to the instrument.

☞ **Note:** *Calls attention to supplemental information.*

This symbol indicates that a shock hazard exists if the precautions in the instruction manual are not followed.

The caution symbol appears on the equipment indicating there is important information in the instruction manual regarding that particular area.

This symbol indicates that the unit radiates heat and should not be touched while hot.

This symbol appears on the equipment and indicates the requirement for separate collection of discarded electrical and electronic equipment in accordance with the European Union Directive 2002/96/EC.

Warning Statements

The following safety warnings appear in the text where there is danger to operating and maintenance personnel, and are repeated here for emphasis.

WARNING
Do not insert any thin metal objects through the perforated cooling air grilles while the load is in operation. Otherwise, the power within the unit could arc over and cause serious bodily injury and/or damage to the unit.

Refer to page 1.

WARNING
Although the interlock terminal is rated to 230 VAC, limit the interlock terminal to less than 30 Vrms. Otherwise, the potential for electrical shock exists.

Refer to pages 7 and 11.

WARNING
Do not touch the surface of the load. The surface may become hot when power is applied to load.

Refer to page 12.

WARNING
Disconnect from RF power sources and the AC line before any disassembly or service. Otherwise, there is a potential for electrical shock.

Refer to pages 13, 14 and 15.

Caution Statements

The following equipment cautions appear in the text and are repeated here for emphasis.

CAUTION
Do not block air flow. Air enters through perforated grilles at the top of the unit and exhausts through a lower grill in the unit. Blocking these grilles could cause unit failure.

Refer to page 7.

CAUTION
Ensure the 115/230 voltage selector on the front panel of the unit is set to the proper voltage before AC power is applied. Incorrect voltage setting can permentaly damage the unit

Refer to page 7.

CAUTION
Do not block or restrict the air flow over the resistor array. Otherwise, the load will overheat and become damaged beyond repair.

Refer to page 11.

CAUTION
Do not apply more than the rated RF power to load. Excessive RF power will damage the load resistors.

Refer to page 11.

CAUTION
Do not use excessive force, as there is the possibility of the resistors chipping or cracking

Refer to page 15.

Safety Statements

USAGE

ANY USE OF THIS INSTRUMENT IN A MANNER NOT SPECIFIED BY THE MANUFACTURER MAY IMPAIR THE INSTRUMENT'S SAFETY PROTECTION.

USO

EL USO DE ESTE INSTRUMENTO DE MANERA NO ESPECIFICADA POR EL FABRICANTE, PUEDE ANULAR LA PROTECCIÓN DE SEGURIDAD DEL INSTRUMENTO.

BENUTZUNG

WIRD DAS GERÄT AUF ANDERE WEISE VERWENDET ALS VOM HERSTELLER BESCHRIEBEN, KANN DIE GERÄTESICHERHEIT BEEINTRÄCHTIGT WERDEN.

UTILISATION

TOUTE UTILISATION DE CET INSTRUMENT QUI N'EST PAS EXPLICITEMENT PRÉVUE PAR LE FABRICANT PEUT ENDOMMAGER LE DISPOSITIF DE PROTECTION DE L'INSTRUMENT.

IMPIEGO

QUALORA QUESTO STRUMENTO VENISSE UTILIZZATO IN MODO DIVERSO DA COME SPECIFICATO DAL PRODUTTORE LA PROZIONE DI SICUREZZA POTREBBE VENIRNE COMPROMESSA.

SERVICE

SERVICING INSTRUCTIONS ARE FOR USE BY SERVICE - TRAINED PERSONNEL ONLY. TO AVOID DANGEROUS ELECTRIC SHOCK, DO NOT PERFORM ANY SERVICING UNLESS QUALIFIED TO DO SO.

SERVICIO

LAS INSTRUCCIONES DE SERVICIO SON PARA USO EXCLUSIVO DEL PERSONAL DE SERVICIO CAPACITADO. PARA EVITAR EL PELIGRO DE DESCARGAS ELÉCTRICAS, NO REALICE NINGÚN SERVICIO A MENOS QUE ESTÉ CAPACITADO PARA HACERIO.

WARTUNG

ANWEISUNGEN FÜR DIE WARTUNG DES GERÄTES GELTEN NUR FÜR GESCHULTES FACHPERSONAL.

ZUR VERMEIDUNG GEFÄHRLICHE, ELEKTRISCHE SCHOCKS, SIND WARTUNGSARBEITEN AUSSCHLIEßLICH VON QUALIFIZIERTEM SERVICEPERSONAL DURCHZUFÜHREN.

ENTRENTIEN

L'EMPLOI DES INSTRUCTIONS D'ENTRETIEN DOIT ÊTRE RÉSERVÉ AU PERSONNEL FORMÉ AUX OPÉRATIONS D'ENTRETIEN. POUR PRÉVENIR UN CHOC ÉLECTRIQUE DANGEREUX, NE PAS EFFECTUER D'ENTRETIEN SI L'ON N'A PAS ÉTÉ QUALIFIÉ POUR CE FAIRE.

ASSISTENZA TECNICA

LE ISTRUZIONI RELATIVE ALL'ASSISTENZA SONO PREVISTE ESCLUSIVAMENTE PER IL PERSONALE OPPORTUNAMENTE ADDESTRATO. PER EVITARE PERICOLOSE SCOSSE ELETTRICHE NON EFFETTUARRE ALCUNA RIPARAZIONE A MENO CHE QUALIFICATI A FARLA.

CONNECT INTERLOCK TO TRANSMITTER BEFORE OPERATING.

BRANCHER LE VERROUILLAGE À L'ÉMETTEUR AVANT EMPLOI.

CONECTE EL INTERBLOQUEO AL TRANSMISOR ANTES DE LA OPERACION.

VOR INBETRIEBNAHME VERRIEGELUNG AM SENDER ANSCHLIESSEN.

PRIMA DI METTERE IN FUNZIONE L'APPARECCHIO, COLLEGARE IL DISPOSITIVO DI BLOCCO AL TRASMETTITORE

About This Manual

This instruction book covers the following Termaline Load Resistor models:

8578A100	8578A150
8578B150	8578B100

Changes to this Manual

We have made every effort to ensure this manual is accurate. If you discover any errors, or if you have suggestions for improving this manual, please send your comments to our Solon, Ohio factory. This manual may be periodically updated. When inquiring about updates to this manual refer to the part number and revision on the title page.

Literature Contents

Chapter Layout

Introduction - Describes the features of the Bird 8578A and B Loads, lists equipment supplied and optional equipment, and provides power-up instructions.

Theory of Operation - Describes how the Bird 8578A and B Loads work.

Installation - Describes procedures required for setting up Bird 8578A and B Loads.

Operating Instructions - Describes procedures required for operating the Bird 8578A and B Loads.

Maintenance - Lists routine maintenance tasks as well as troubleshooting for common problems. Specifications and parts information are also included.

Chapter 1 Introduction

General

The Models 8578A100 and 8578A150 are air cooled, high powered Termaline Load resistors designed to be quiet, rugged and trouble free. They are rigid RF line terminations used as dummy antennas. They are forced air cooled and are capable of dissipating RF line power up to 10 or 15 kW, depending on the model. Virtually maintenance free and simple to operate, these units should provide years of trouble free operation yet are field repairable in the event of failure of the load resistor or other components. The RF sections are composed of a parallel combination of resistors.

Description

The units are rectangular in shape. They are supported on the bottom by four bumper feet. The RF input connector is located on the top center of the unit. Perforated side panel grilles at the top and bottom of the units allow for direct forced air cooling of the resistors. The AC power receptacle, ON/OFF switch and transmitter interlock are located on the front panel of the unit. The rear and side panels are removable for servicing. Refer to Figure 1.

> WARNING
> Do not insert any thin metal objects through the perforated cooling air grilles while the load is in operation. Otherwise, the power within the unit could arc over and cause serious bodily injury and/or damage to the unit.

Items Supplied

The following items are supplied with the 8578A and 8578B:

- Manuals CD
- Single pole fusedrawer, for 115V operation (installed)
- Fuse, 6.3A, T, for 115V operation (installed)
- Two pole fuse drawer, for 230V opertation
- 2 Fuses, 3.15A, T, for 230V operation

Specifications

Impedance	50 ohms nominal
VSWR Model 8578A100, 8578B100 Model 8578A150, 8578B150	 1.15:1 maximum DC-108 MHz 1.15:1 maximum 87.5-108 MHz
Connectors	Standard 1-5/8" Diameter Swivel Flange Optional 3-1/8" Diameter Unflanged
Power Rating Model 8578A100, 8578B100 Model 8578A150, 8578B150	 10 kW continuous duty 15 kW continuous duty
Frequency Range Model 8575A100 Model 8578A150	 DC-108 MHz 87.5-108M Hz
Dimensions without connector with connector Ambient Temperature Interlock contact rating Cooling Method Weight, Nominal AC Power Requirements	 13-7/16" L x 16-15/32" W x 36-5/8" H (341 x 418 x 730mm) 13-7/16" x 16-15/32" x 39-3/32" (341x418x993mm) -40°C to +40°C(-40°F to 104°F) 10 Amp @ 120 VDC 5 Amp @ 240 VAC Forced air cooled ‘A’ series: 72 lb (32.7 kg) ‘B’ series: 60 lb (27.2 kg) 115 VAC, 5 Amps Nominal 230 VAC, 2.5 Amps Nominal 50/60Hz
Fuses 115 Volt operation 230 Volt operation	 5 x 20mm Time-delay 6.3 Amp 5 x 20mm Time-delay 3.15 Amp
Finish	Grey Powder Coat

Unpacking and Inspection

1. Carefully inspect the shipping container for signs of damage.
2. Do one of the following:
   - **If damage is noticed**, do not unpack the unit. Immediately notify the shipping carrier and Bird Electronic Corporation of the damage.
   - **If the container is not damaged**, unpack the unit. Save the packing materials for repacking.
3. Inspect all of the components for visual signs of damage.

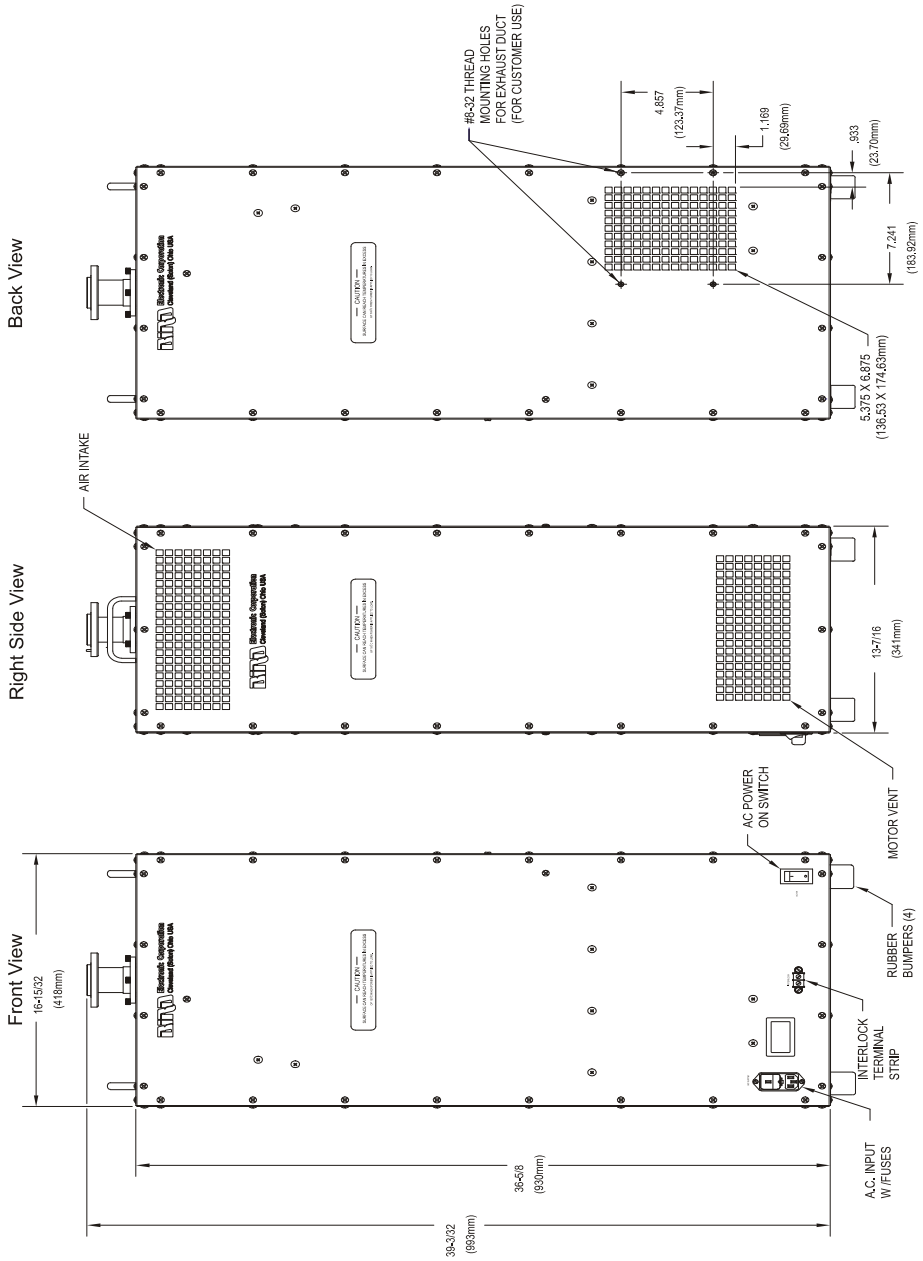
   ☞ **Note:** *Immediately notify the shipping carrier and Bird Electronic of equipment damage or missing parts.*

Site and Shelter Requirements

The equipment is not intended for outdoor use, or use in areas of condensing humidity. The surrounding air must be free of contaminants or particles that could be drawn into the air intakes. These load resistors have no intermediate dielectric fluids or coolant and require no cooling water hookups. The unit should be placed where adequate space is available for air circulation and an AC power source is available.

Do not enclose the unit in a small room or closet without proper ventilation. In small rooms or restricted areas, the heat given off by the unit may increase the ambient temperature to an unacceptable level for sufficient cooling of the resistors.

Figure 1 Outline Drawing - (all models)



Chapter 2 Theory of Operation

General

The 8578A and 8578B series consists of high powered, air cooled, RF loads used for termination of coaxial transmission lines. The RF energy, when converted into heat, is transmitted directly to the surrounding area by the forced air system.

RF Section Description

The RF section, of the 8578A and 8578B series, is composed of a parallel combination of tubular resistors. These resistors are carefully positioned to provide a reduction in surge impedance proportional to the distance along the resistive system, which finally terminates to the housing forming the return path for the coaxial circuit. This produces a very uniform and almost reflectionless line termination over the stated frequencies of the load resistor.

Heat Transfer

The resistors used in the 8578 series are of a tubular type, situated in a vertical position within their housing. When the unit is in operation, a fan located at the bottom of the unit draws air into the top grille openings and directs it over the RF resistor network. The heat, developed in the resistors from dissipation of the RF energy, is carried off by the flow of air over the resistors surface. The hot air is then exhausted through the lower grille opening in the unit.

Interlock Control Circuit

The interlock control circuit provides fail-safe protection of the transmitter and load resistor in the event of restricted air flow or excassive ambient temperture to the load. This protection is necessary because dissipation of the heat generated by the RF power is critically dependent upon a required minimum flow of cooling air at all times. If the air flow over the resistor array should stop or be restricted and the temperature in the RF chamber should rise beyond a safe limit, the heat sensor unit will sense the change and actuate the interlock relay to reverse the process and turn off the transmitter. The interlock system will not permit re-operation of the transmitter until the air flow is restored and a safe low temperature in the RF housing is once again attained.

Location Mounting

There are no provisions for mounting of these units. These units are designed for use in a vertical position, however, if the situation should arise, they may be used in any position. If the unit is to be used in any other position, be sure the mounting is substantial and clearance around the load is maintained for cooling.

> CAUTION
> Do not block air flow. Air enters through perforated grilles at the top of the unit and exhausts through a lower grill in the unit. Blocking these grilles could cause unit failure.

Placement

For ease of movement, hold the two handles on each side of the RF input connector, located at the top center of the unit. Move the unit into position, and rest it on the four bumper feet.

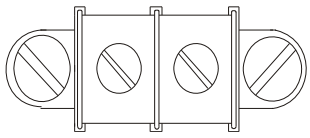
> WARNING
> Although the interlock terminal is rated to 230 VAC, limit the interlock terminal to less than 30 Vrms. Otherwise, the potential for electrical shock exists.

Interlock Connections

There are two terminals on the interlock connection of the load, with a rating of 10A @ 120V AC and 5A @ 250VAC. Check the requirements of the transmitter interlock and make the connections to the appropriate terminals as required.

- Attach the transmitter interlock connections to the two binding posts on the control panel. See Figure 2.

Figure 2 Interlock Terminal



> CAUTION
> Ensure the 115/230 voltage selector on the front panel of the unit is set to the proper voltage before AC power is applied. Incorrect voltage setting can permentaly damage the unit.

Attaching the AC Line

☞ **Note:** *8578AS loads are shipped from the factory foramtted for 115 VAC operation. For 230 VAC operation, the fuses and fuse drawer must be changed to use the two pole fuse drawer included with the unit and the two 3.15 Amp fuses also supplied. The power entry module must also be set to 230 volts.*

A standard AC power cord is required.

The AC power supply may be either 115 or 230 volts depending on the unit requirements. AC is supplied to the power entry module by means of a cable and matching plug. For proper protection, if a 3-wire type plug and outlet is not used, fasten the green wire at the supply end to a satisfactory ground. Do not apply RF power to the unit unless the power cord is connected and the ON/OFF switch is in the ON position.

☞ **Note:** *Ensure the proper fuses are used. The unit is shipped with fuses installed for 115V usage. If the unit is to be used at 230V, install the 3.15A fuses. See "Relpacing the Fuse" on page 17.*

Attaching the RF Line

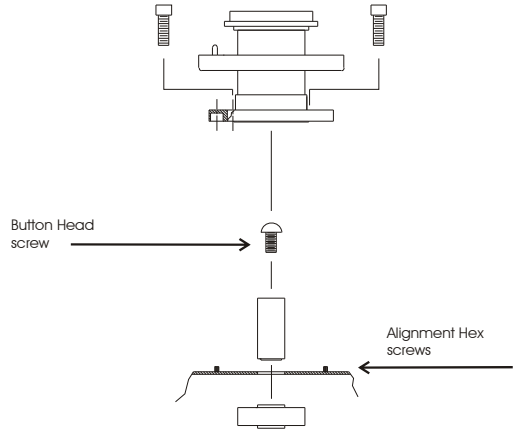
After installation of the load, the coaxial RF transmission line may be attached using the standard 1-5/8" EIA Swivel Flange Connector or the optional 3-1/8" Unflanged Connector kit p/n 8731A700.

Removing the 1-5/8" EIA Swivel Flange Connector

☞ **Note:** *Retain all screws for later reassembly.*

1. Remove the four hex screws securing the Swivel Flange Connector to the top of the unit.
2. Remove the Button head screw located in the center of the Inner Conductor.

Figure 3 Replacing the Flanged Connector



Attaching the 3-1/8" Unflanged Conductor

1. Attach the new Inner Conductor using the button head screw.
2. Attach the 3-1/8" Unflanged Connector with 4 socket head cap screws to the unit by aligning the alignment holes over the 4 socket head cap screws in the top of the unit.

   ☞ **Note:** *The coupling must be fastened with all 4 of the screws. Tighten evenly all around.*

Chapter 4 Operating Instructions

General

The Models 8578A100, 8578B100, 8578A150, and 8578B150 have only one operating control, the ON/OFF switch. When installed the only requirement is for the ON/OFF switch to be placed in the ON position. The unit is now ready to accept RF power. Once the unit is set, there is no need for the presence of an operator.

Load Power

CAUTION
Do not block or restrict the air flow over the resistor array. Otherwise, the load will overheat and become damaged beyond repair.

CAUTION
Do not apply more than the rated RF power to load. Excessive RF power will damage the load resistors.

Do not operate above the rated capacity; i.e. 10kW or 15kW of power. The unit will handle a small percentage of overload until the interlock system sensor relay opens due to over temperature and turns off the transmitter. If a large amount of overloading occurs, resistor failure is eminent before the interlock system reacts.

Shortly after load power has been applied, the RF line may be too hot to touch. Disconnect only while following the Shut Down procedure.

WARNING
Although the interlock terminal is rated to 230 VAC, limit the interlock terminal to less than 30 Vrms. Otherwise, the potential for electrical shock exists.

Operation Under Normal and Abnormal Conditions

The interlock is for proper operation at the rated ambient condition of 40°C (104°F).

Models 8578A100 and 8578B100 - The normally closed relay opens at 86°C ± 3°C (186.8°F ± 5.4°F) and closes at 80°C ± 3°C (176°F ± 5.4°F).

Models 8578A150 and 8578B150 - The normally closed relay opens at 125°C ± 3.5°C (257°F ± 6.3°F), and closes at 100°C ± 5°C (212°F ± 9°F).

Shutting Down

1. Turn the transmitter off.

> WARNING
> Do not touch the surface of the load. The surface may become hot when power is applied to load.

2. Disconnect the RF line.
3. Allow the fan motor to continue running for a few minutes to allow the resistive elements and the surface to cool.
4. Remove AC power.

Measuring and Monitoring RF Power

The Models 8578A100, 8578B100, 8578A150, and 8578B150 Load Resistors may be used in conjunction with any one of the various Bird rigid coaxial line Thruline® Wattmeters. When fitted with the appropriate line section and wattmeter, either model becomes a useful tool for tuning and adjusting a transmitter as well as monitoring RF power directly in watts. Call a Bird Sales office for more information about Thruline wattmeters. See “Customer Service” on page 19.

Troubleshooting

> WARNING
> Disconnect from RF power sources and the AC line before any disassembly or service. Otherwise, there is a potential for electrical shock.

☞ **Note:** *For corrections requiring repair or replacement of components, refer to the appropriate section for your specific model. Only those functions within the scope of normal maintenance are listed. This manual cannot list all malfunctions that may occur, or corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify a qualified service center.*

Problem	Possible Cause	Possible Correction
Load is not operating.	No AC power.	Make sure the AC line cord at the wall and at the AC line modules are completely inserted.
		Place power switch in the ON position.
		Replace fuse at the AC line module. See “Relpacing the Fuse” on page 17.
Interlock is active.	Overheating	Lower power at source.
		Ensure input or output vents are not restricted.
		Replace thermoswitch.
		Replace the blower assembly. See “Replacing the Blower Assembly” on page 15.
High resistance	One or more resistors failing.	Replace resistor or resistors. See “Replacing the Resistors” on page 15.

Cleaning

Cleaning Outside Surfaces

The most important cleaning task is to remove accumulations of dust, lint, and grime that could interfere with proper air circulation and therefore efficient heat transfer. The load surfaces, particularly on the inside, should be checked periodically for possible collection of dust and lint.

- **Equipment Needed:**
  - Lint-free cleaning cloth
  - Mild detergent

Cleaning the Instrument Housing and Panels

1. Remove loose dirt and grime, gently, using a soft clean cloth dampened with a warm solution of mild detergent and water.

   ☞ **Note:** *A vacuum can be used to clean the load if necessary.*

2. Do one of the following:
   - **For 8578A100 or A150 models -**
     a. Remove the 22 truss head screws from the right side panel.
   - **For 8578B100 and 150 models -**
     a. Remove the 16 truss head screws from the right side panel.
     b. Remove the 6 screws from the top and bottom panels securing the side panel to the unit.
3. Remove the right side panel.
4. Clean off dust and lint.
5. Check under the ribs of the air intake grille (at the side) for dust collection. If there is a buildup, remove the grille and clean under the ribs.

   ☞ **Note:** *Replace right side panel and screws.*

Cleaning the Connector and Outside Surface

☞ **Note:** *Use a soft, clean cloth dampened with mild detergent.*

- Wipe dust and dirt from the outside surface of the unit

  ☞ **Note:** *This should be performed at regular intervals.*

- Check the condition of the RF coaxial connector.

Clean the RF input connector, If needed, use a self-drying contact cleaner that leaves no residue.

Disassembling the Enclosure

WARNING
Disconnect from RF power sources and the AC line before any disassembly or service. Otherwise, there is a potential for electrical shock.

As mentioned previously, the Model 8578A100, 8578B100, 8578A150, and 8578B150 RF Loads are field repairable.

Do one of the following:

- **For 8578A series units:**
  a. Remove and retain the 22 Truss head machine screws from the right side panel
  b. Remove the housing panel.
- **For 8578B series units:**
  a. Remove and retain the 16 Truss head machine screws from the right side panel.
  b. Remove and retain the 6 Truss head machine screws from the top and bottom panels that secure the right side panel.
  c. Remove the right side panel.

With the RF housing panel removed, the resistor assembly can be tested and replaced if necessary.

Diagnosing the RF Assembly

☞ **Note:** *The RF section for the Model 8578A100 and 8578B100 is comprised of a parallel combination of 9 resistors resulting in a total nominal resistance of 55 ohms.*
The RF section for Model 8578A150 and 8578B150 is comprised of a parallel combination of 12 resistors resulting in a total nominal resistance of 60 ohms.
If there has been a drastic change in the resistance of the load or if you have reason to suspect a resistor has failed, the following procedure may be helpful in finding a faulty resistor.

1. Perform a visual inspection for cracks or burned spots on the surface of each resistor.

   ☞ **Note:** *If no visual discrepancies are found to indicate resistor failure, it will be necessary to take resistance measurements on each resistor individually.*

2. Remove the resistors from the load.

   ☞ **Note:** *The resistors are held very firmly in their clips. Use caution and carefully remove one end of the resistors at a time.*

3. Connect the test leads across each resistor end using a digital multimeter or an ohmmeter with an accuracy of 1% at 50 ohms.
   - **For Models 8758A100 and 8578B100**, individual resistance measurements at 25°C (77°F) should be 500 ohms ± 20%.
   - **For Models 8578A150 and 8578B150**, individual resistance measurements at 25°C (77°F) should be 720 ohms ± 20%.

4. Record the value of the resistance for each resistor.

   ☞ **Note:** *If resistors are found that greatly exceed the respective ranges, they should be replaced. Contact Bird Technologies Group for replacement resistors. Contact Bird Technologies Group customer service for replacement resistors (866) 695-4569.*

Replacing the Resistors

CAUTION
Do not use excessive force, as there is the possibility of the resistors chipping or cracking

☞ **Note:** *To reassemble the RF assembly and panel, reverse the disassembly instructions given above. Ensure to install all of the screws in the panels.*

Replacing the Blower Assembly

WARNING
Disconnect from RF power sources and the AC line before any disassembly or service. Otherwise, there is a potential for electrical shock.

Motor Blower Assembly Replacement, 8578A Series

1. Remove and retain the 22 Phillips head machine screws from the edges of the right side panel.
2. Remove the panel.
3. Remove, carefully, the resistors behind the right side panel.

4. Disconnect the wires from the motor to the power entry module, switch and terminal strip.

   ☞ **Note:** *These are quick disconnects and may be easily detached.*

5. Lay the load on its side.
6. Remove the 14 #8 truss head screws from the bottom panel.
7. Remove the bottom panel.
8. Remove the 5 1/4-20 pan head screws and washers that secures the blower to the blower support bracket.
9. Remove the 3 1/4-20 pan head screws and washers that secure the supports to the bottom of the blower.
10. Remove the 4 #10-32 screws and washers that secure the blower supports to the front and rear panels.
11. Remove the supports.
12. Remove the blower from the blower housing.
13. Install the new blower in the load housing.
14. Reverse the procedure to secure the blower into place.

Motor Blower Assembly Replacement, 8578B, 100, and 150 Series

1. Remove and retain the sixteen (16) truss head screws that fasten the right side panel to the front and back panels.
2. Remove and retain the six (6) truss head screws that fasten the right side panel to the top and bottom panels then remove the right side panel.
3. Remove and retain the four (4) truss head screws that fasten the left side panel to the blower assembly support bracket.
4. Lay the 8578B series load down on a flat surface on its left side panel.
5. Remove and retain the remaining eleven truss head screws from the bottom panel and remove the bottom panel.
6. Disconnect the orange, white, red, blue, and black motor wires via the in-line, quick connect connectors
7. Remove the green/yellow ground wire from the inside of the front panel.

   ☞ **Note:** *Retain the hardware for reassembly.*

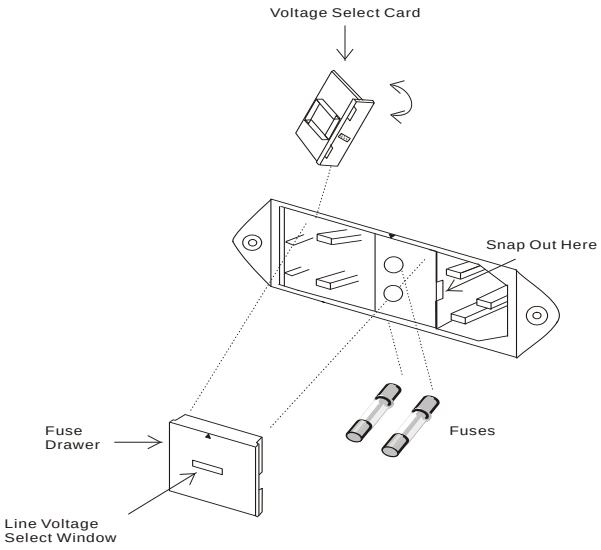
8. Cut the two wire ties that hold the thermal switch wires to the front panel and other wire assemblies
9. Disconnect the thermal switch wires from the interlock terminal strip.
10. Remove and retain the truss head screws (four per panel) that hold the front and rear panels to the top blower support bracket.
11. Remove and retain the four truss head screws and other hardware holding the two lower blower support brackets to the front and rear panels.
12. Remove and retain the truss head screw holding the lower resistor bracket to the rear panel.
13. Spread the front and rear panels apart enough to clear the blower mounting brackets on the blower assembly and lift it out of the unit.
14. Remove all three blower support brackets from the old blower (by removing the eight 1/4" pan head screws).
15. Mount the support brackets on the replacement blower assembly and replace the blower assembly in the unit by reversing the above procedure.

Relpacing the Fuse

1. Pry, with a small flat head screwdriver, the fuse cover door tab out.
2. Open the fuse cover door.
3. Replace the fuses in the holder according to the AC mains voltage supplied.

   ☞ **Note:** *6.3A, T (P/N 5A2257-24) for 115V and 3.15A, T, (P/N 5A2257- 21) for 230V applications.*
4. Place the drawer into the AC line module.
5. Push the drawer until it snaps in place.

Figure 4 Fuse Replacement



Replacing the AC Line Module

1. Unplug the power cord from the AC line module.
2. Lay the load on its side.
3. Remove the bottom panel by removing the 14 screws securing it to the unit.
4. Remove the screws at each end of the module while holding the hex nuts on the other side of the front panel.

   ☞ **Note:** *Retain the screws and other hardware after they have been removed.*
5. Pull the AC line module straight out and through the front panel.
6. Detach the wires connected to the module.

   ☞ **Note:** *The wires utilize quick disconnects.*
7. Reverse this procedure to replace the power module.

Storing

If the unit is to be unused or stored for any length of time, cover it with a cloth or plastic sheet and store it in a moisture free, cool, dry place. There is no special preparation for the unit however; moisture will be the greatest concern. Storage temperatures should remain -40° to 70°C (-40° to 158°F) and the relative humidity percentage should remain low.

Replacement Parts List

Models 8578A100 and 8578B100

Qty.	Description	Part Number
9	Load Resistor	5A2388
1	Blower assy. 8578A series, 115/230V, 50/60Hz	8578A006
	Blower assy. 8578B series, 115/230V, 50/60Hz	RPK8578-1
1	Rocker Switch	5A2384
1	AC Power Module	5A2380-1
1	Thermal Switch	5A2382
18	Resistor Clip	5A2443
1	1-5/8" EIA Swivel Flange	8578A008
1	Conductor, Center (1-5/8” input)	8578A021
1	Terminal Strip, 8578A series	5-1840-2
	Terminal Strip, 8578B series	5A1840-2
2	Fuse, 5x20mm 6.3Amp (for 115V operation)	5A2257-24
2	Fuse, 5x20mm 3.15Amp (for 230V operation) Time-Delay	5A2257-21
1	3-1/8" Flanged Connector Kit	8731A700

Models 8578A150 and 8578B150

Qty.	Description	Part Number
12	Load Resistor	5A2393-1
1	Blower assy. 8578A series, 115/230V, 50/60Hz	8578A006
	Blower assy. 8578B series, 115/230V, 50/60Hz	RPK8578-1
1	Rocker Switch	5A2384
1	AC Power Module	5A2380-1
1	Thermal Switch	5A2417
24	Resistor Clip	5A2443
1	1-5/8" EIA Swivel Flange	8578A008
1	Conductor	8578A021
1	Terminal Strip, 8578A series	5-1840-2
	Terminal Strip, 8578B series	5A1840-2
2	Fuse, 5x20mm 6.3Amp (for 115V operation)	5A2257-24
2	Fuse, 5x20mm 3.15Amp (for 230V operation)	5A2257-21
1	3-1/8" Flanged Connector Kit	8731A700

Customer Service

Any maintenance or service procedure beyond the scope of those in this chapter should be referred to a qualified service center.

If you need to return the unit for any reason, request an RMA through the Bird Technologies website (link shown below). All instruments returned must be shipped prepaid and to the attention of the RMA number.

Bird Service Center
30303 Aurora Road
Cleveland (Solon), Ohio 44139-2794
Fax: (440) 248-5426
E-mail: *bsc@bird-technologies.com*

For the location of the Sales Office nearest you, visit our website at:

http://www.bird-technologies.com

Limited Warranty

All products manufactured by Seller are warranted to be free from defects in material and workmanship for a period of one (1) year, unless otherwise specified, from date of shipment and to conform to applicable specifications, drawings, blueprints and/or samples. Seller's sole obligation under these warranties shall be to issue credit, repair or replace any item or part thereof which is proved to be other than as warranted; no allowance shall be made for any labor charges of Buyer for replacement of parts, adjustment or repairs, or any other work, unless such charges are authorized in advance by Seller.

If Seller's products are claimed to be defective in material or workmanship or not to conform to specifications, drawings, blueprints and/or samples, Seller shall, upon prompt notice thereof, either examine the products where they are located or issue shipping instructions for return to Seller (transportation-charges prepaid by Buyer). In the event any of our products are proved to be other than as warranted, transportation costs (cheapest way) to and from Seller's plant, will be borne by Seller and reimbursement or credit will be made for amounts so expended by Buyer. Every such claim for breach of these warranties shall be deemed to be waived by Buyer unless made in writing within ten (10) days from the date of discovery of the defect.

The above warranties shall not extend to any products or parts thereof which have been subjected to any misuse or neglect, damaged by accident, rendered defective by reason of improper installation or by the performance of repairs or alterations outside of our plant, and shall not apply to any goods or parts thereof furnished by Buyer or acquired from others at Buyer's request and/or to Buyer's specifications. Routine (regularly required) calibration is not covered under this limited warranty. In addition, Seller's warranties do not extend to the failure of tubes, transistors, fuses and batteries, or to other equipment and parts manufactured by others except to the extent of the original manufacturer's warranty to Seller.

The obligations under the foregoing warranties are limited to the precise terms thereof. These warranties provide exclusive remedies, expressly in lieu of all other remedies including claims for special or consequential damages. SELLER NEITHER MAKES NOR ASSUMES ANY OTHER WARRANTY WHAT-SOEVER, WHETHER EXPRESS, STATUTORY, OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND NO PERSON IS AUTHORIZED TO ASSUME FOR SELLER ANY OBLIGATION OR LIABILITY NOT STRICTLY IN ACCORDANCE WITH THE FOREGOING.