

Agilent 8890  
**Gas Chromatograph**  
**Service Manual**



# Notices

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## Safety Notices

### CAUTION

A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

### WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

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# 1

## Before Servicing the Instrument

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Before servicing the PRODUCT NAME Complete, observe the following safety precautions as well as all safety precautions in the *Agilent 8890 Gas Chromatograph Safety Manual*.

## Information

In accordance to Agilent commitment to customer service and safety, this instrument and its accompanying documentation complies with the CE (NEN 5509) specifications and the safety requirements for electrical equipment for measurement, control, and laboratory use (CEI/IEC 1010-1) cCSAus and FCC-b.

To prevent any injury to the user or any damage to the instrument it is essential that you read the information in this chapter.

If this manual is not in your mother language or if you have problems understanding the text, we advise you to contact your Agilent office for assistance. Agilent cannot accept responsibility for any damage or injury caused by misunderstanding of the information in this manual.

# Indications

This manual contains warnings and precautionary statements that can prevent personal injury, instrument damage and loss of data if properly followed. Statements of this nature are called to your attention by the following symbols:

## CAUTION

The CAUTION calls attention to procedure, practice, CAUTION or the like, which, if not correctly performed or adhered to, could result in inadequate functioning of the instrument.

## WARNING

The WARNING calls attention to a procedure, WARNING practice, or the like, which, if not correctly performed or adhered to, could result in personal injury or damage to the product.

Specific symbols, drawing attention to safety hazards have been applied on appropriate places on the instrument. The following symbols can be encountered:

See accompanying instructions for more information.



Indicates a hot surface.



Indicates hazardous voltages.



Indicates earth (ground) terminal.



Indicates potential explosion hazard.



Indicates electrostatic discharge hazard.



Indicates a hazard. See the Agilent GC user documentation for the item labeled.



Indicates that you must not discard this electrical/electronic product in domestic household waste



## Cautions

### CAUTION

An experienced Agilent service engineer will normally carry out the installation of this instrument. Any damage to the system that occurs during unpacking when it is not carried out in the presence of a Agilent service engineer will result in the rejection of a warranty claim.

This instrument should be placed in a suitable location with sufficient ventilation to remove gases and vapors. Space around the instrument must be sufficient to enable cooling of the instrument.

Before plugging the instrument in or turning the power on, always make sure that the voltage and fuses are set appropriately for your local power source.

Do not turn on the instrument if there is a possibility of any kind of electrical damage. Instead, disconnect the power cord and contact your Agilent office.

The supplied power cord must be inserted into a power outlet with a protective earth ground connection. When using an extension cord, make sure that the cord is also properly grounded.

Do not change the external or internal grounding connections as this could endanger you or damage the instrument.

The instrument is properly grounded when shipped. You do not need to make any changes to the electrical connections or to the instrument chassis to ensure safe operation.

When working with this instrument, follow the regulations for GLP (Good Laboratory Practice). Take care to wear safety glasses and appropriate clothing.

Do not place containers with flammable liquids on this instrument. Spillage of the liquid over hot parts may cause fire.

This instrument may use flammable or explosive gases e.g. hydrogen under pressure. Be sure to be familiarized with and to follow accurately the operation procedures prescribed for those gases before operating the instrument.

Never try to repair or replace any component that is not described in this manual without the assistance of a Agilent service engineer. Unauthorized repairs or modifications will result in rejection of warranty claims.



## 1 Before Servicing the Instrument

### Cautions

#### CAUTION

Always disconnect the AC power cord before attempting any type of maintenance.

Use proper tools when working on the instrument to prevent danger for you and/or damage to the instrument.

The customer should not attempt to replace the battery or fuses in this instrument.

Damage can result if the instrument is stored under unfavorable conditions for prolonged periods (e.g. subject to heat, water, etc.).

Do not shut off column flow when the oven temperature is high or may damage the column.

This unit has been designed and tested in accordance with recognized safety standards and designed for use indoors.

If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired.

Substituting parts or performing any unauthorized modification to the instrument may result in a safety hazard.

## Warnings

The following general safety warnings must be observed during all phases of operation, service, and repair. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and the intended use of the instrument.

Agilent, Inc. assumes no liability for failure to comply with these requirements

- Allow the inlets, detectors and oven to cool down before an installation.
- Remove the Power connector before installation, service, and repair.
- Covers should be removed only by service-trained personnel who are aware of all involved hazards.

# Hand Tools

In addition to a well-equipped general toolbox, the specific tools listed in **Table 1** will be used during service.

**Table 1** GC toolkit

Description	Part no.
Torque wrench kit	5190-9571
Screwdriver, Torx, T-10	5182-3466
Screwdriver, Torx, T-20	5182-3465
Torx key, T-10	8710-2140
Wrench, open-end, 1/4-inch and 5/16-inch	8710-0510
Wrench, open-end, 7/16-inch and 9/16-inch	8710-0803
Wrench, open-end, 1/2-inch and 7/16-inch	8710-0806
Wrench, open-end, 7/16-inch and 3/8-inch	8710-0972
Driver, nut, 7-mm	8710-1217
Cutter, tube	8710-1709
Pliers, needle-nose, pointed, serrated jaws	8710-0004
Forceps	G3573-70053
Tweezers	8710-0007
Lens, magnifying	G2855-40001
Tool, ferrule,.25-.32 mm, 2 x 3 x 3/4-inch	RFT-2500
Tool, ferrule,.53 mm	RFT-5300
Septum tool, knurled handle	450-1000
Tool bag	9222-3253

## Prepare GC for Service

Before performing maintenance, the GC must be made ready. This process can include:

- Setting low temperatures to avoid burns and other injuries
- Setting reduced flows to avoid safety hazards and to prevent damage to the instrument
- Turning off the GC and disconnecting the GC from power
- Venting a mass selective detector

### WARNING

Turn off the power to the Gas Chromatograph and disconnect the power cord at the source.

### WARNING

The metal surfaces of the Gas Chromatograph can be very hot and could burn your skin.

### WARNING

Before removing the Gas Chromatograph covers, allow oven to cool down before removing the covers.

### WARNING

Disconnect and remove all sample line(s) and carrier gas supply line(s).

To put the GC in a general standby state suitable for most maintenance, do the following:

- 1 If an MS is installed, cool down and vent the MS. Refer to the relevant *MSD Operating Manual* for details.
- 2 If LCO<sub>2</sub> or LN<sub>2</sub> cooling is being used, do the following:
  - a Close the delivery valve on the coolant tank.
  - b On the GC touch screen, navigate to Maintenance > Inlets > Perform Maintenance, and then choose Service Cryo Cooling Tank.
  - c When the GC becomes ready, carefully disconnect the coolant line at both ends to let any residual coolant escape.
- 3 On the touch screen, navigate to **Maintenance > Instrument > Perform Maintenance > Maintenance Mode > Start Maintenance**.
- 4 When the GC becomes ready, turn it off and unplug the power cord from the wall outlet.
- 5 Turn off all connected gases at the source.

## 2

# Replacement Procedures

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# Replacing the Power Switch

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

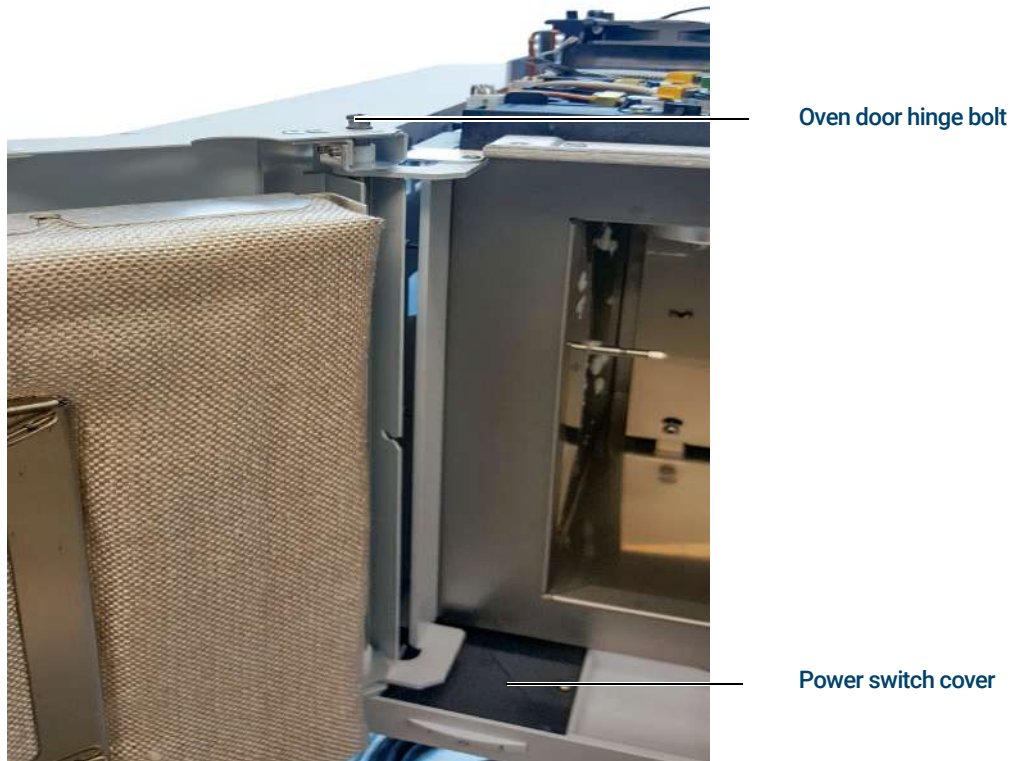
### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the detector top cover and left side inlet cover.
- 5 Loosen and remove the T-20 Torx oven door hinge bolt shown.

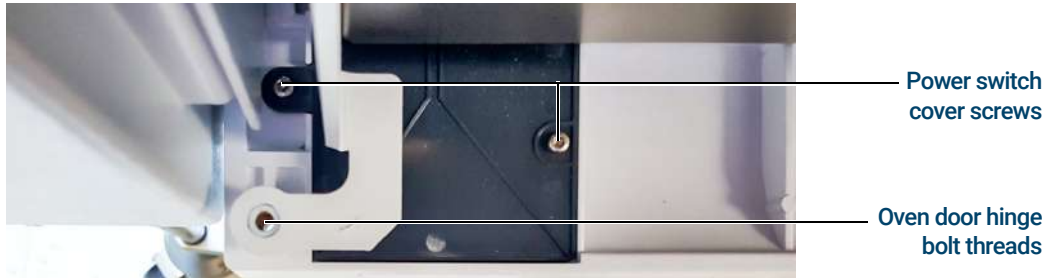


- 6 Remove the oven door by lifting the door away from the GC.

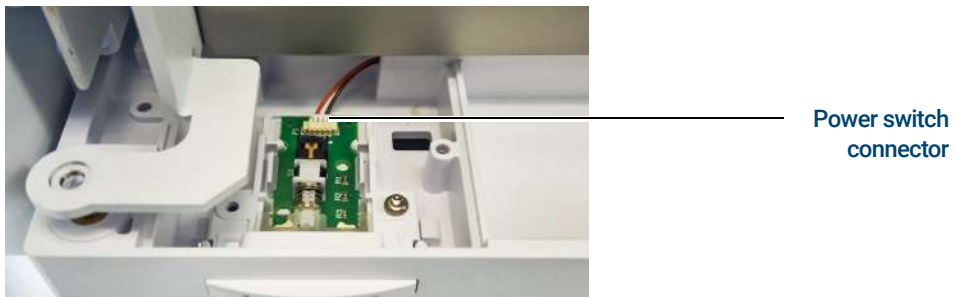
## 2 Replacement Procedures

### Replacing the Power Switch

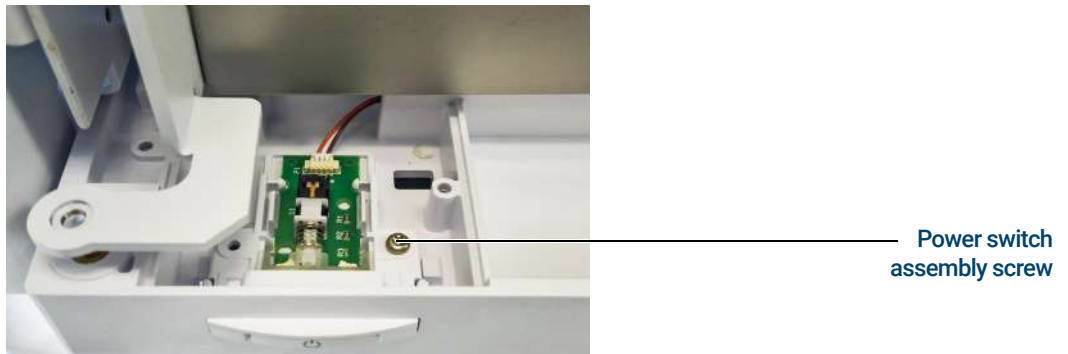
- 7 Remove the two T-10 Torx screws from the top of the power switch cover.



- 8 Remove the power switch cover to expose the power switch assembly.
- 9 Unplug and remove the connector between the power switch assembly and the GC.



- 10 Remove the T-10 Torx screw from the power switch assembly shown.



### WARNING

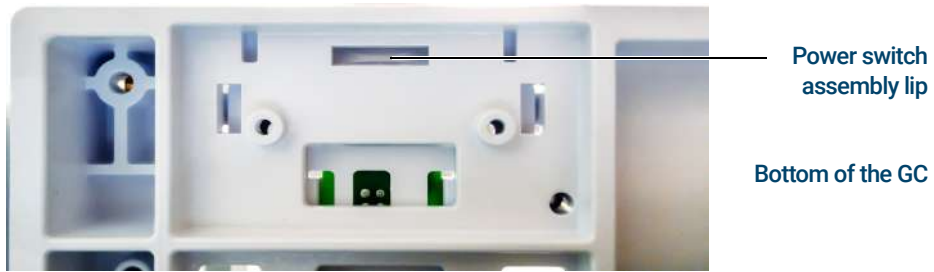
Be certain when moving the GC that it is stable and cannot fall.

- 11 The power switch assembly lip is under the GC. In order to reach it, you must slide the GC partially off the bench so that the right front corner is accessible from below. Do not slide the GC off the bench any farther than necessary to reach the power switch assembly lip.

## 2 Replacement Procedures

### Replacing the Power Switch

- 12** Using a small flat-head screwdriver, press up on the power switch assembly lip from the bottom of the GC.



- 13** While applying pressure to the power switch assembly lip from below the GC, slide the power switch assembly back from above.
- 14** Reassembly is the reverse of the removal process.



# Replacing the Power Supply

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove the upper back panel and lower back panel.
- 3 Remove the two T-20 Torx screws from the power supply vent cover.



Power supply vent cover screws

- 4 Remove the power supply vent cover.
- 5 Remove the T-20 Torx screw from the power supply mounting bracket.



Power supply mounting bracket screw

## 2 Replacement Procedures

### Replacing the Power Supply

- 6 Disconnect the power cable from the AC board.



Power cable to  
AC board connector

- 7 Disconnect the power supply from the AC board by lifting the power supply mounting bracket and pulling the power supply handle to the right.
- 8 Move interfering wires aside and remove the power supply from the GC.



Power supply handle

- 9 Loosen the thumbscrew on the power supply to release the power supply from the power supply mounting bracket.
- 10 Reassembly is the reverse of the removal process.

# Replacing the AC Board

- 1 Prepare the GC for service. See [Prepare GC for Service](#).

## WARNING

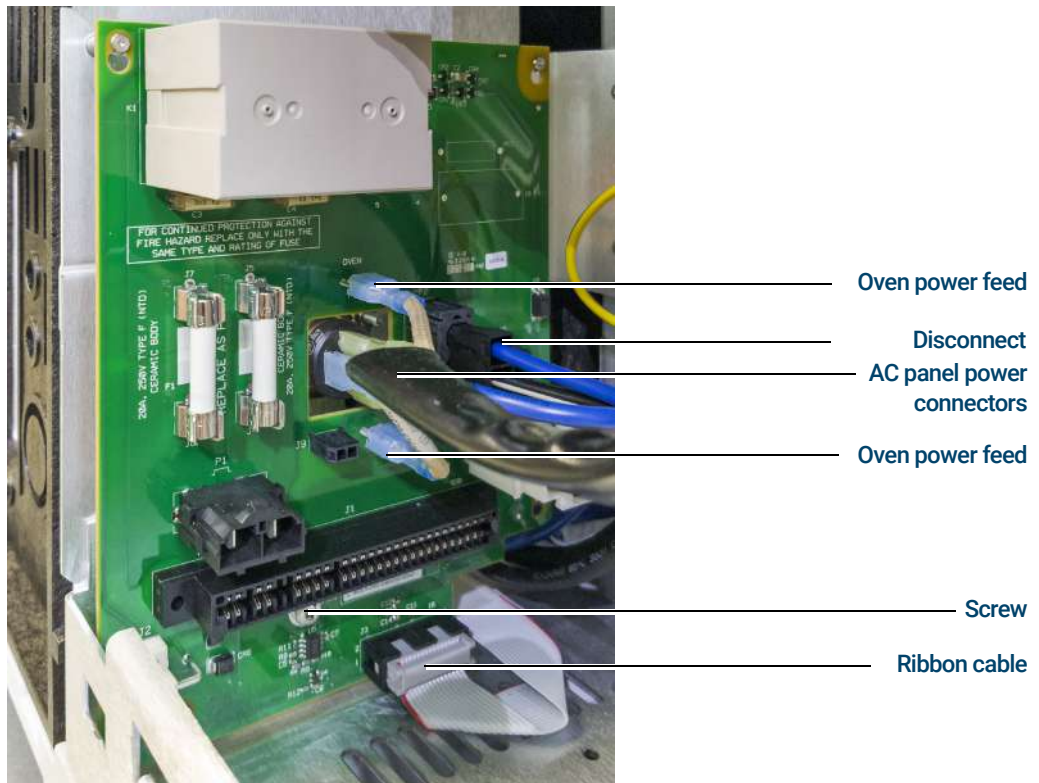
### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove the power supply. See [Replacing the Power Supply](#).
- 3 Disconnect the two oven power feeds.
- 4 Disconnect the three power feeds from the plugs behind the AC board.
- 5 Disconnect the ribbon cable from the lower-right corner of the AC board.
- 6 Remove the cable at the large 4 pin Molex connector.
- 7 Remove the T-20 Torx screw from the AC board.



- 8 Lift the AC board up to release it from the corner mounting pins.
- 9 Pull the AC board up and away from GC.
- 10 Reassembly is the reverse of the removal process.

# Replacing the Touch Screen

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the detector top cover, right-side panel, and electronics cover.
- 5 Remove the two T-10 Torx screws from the HDMI cable stay.

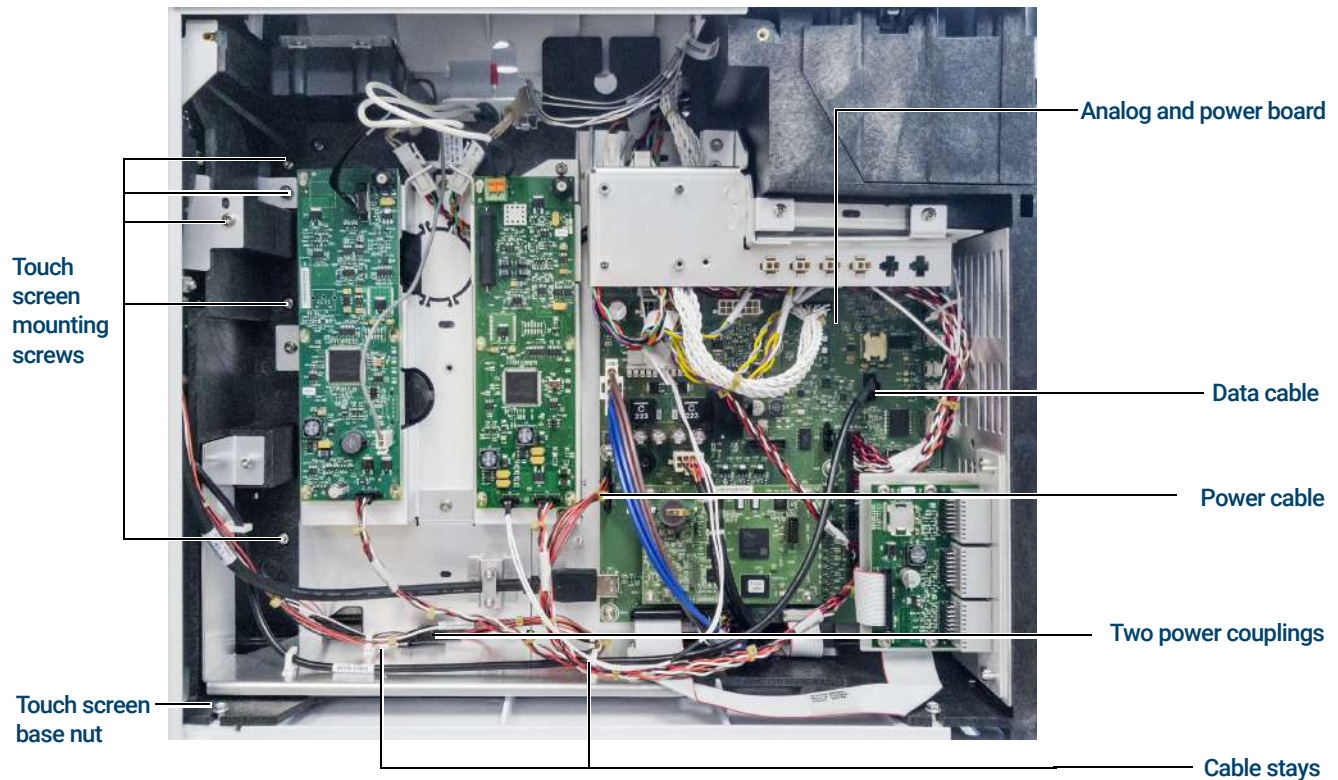


- 6 Disconnect the HDMI cable by pulling straight down on the HDMI connector.
- 7 Disconnect the two power couplings in the bundle of wires between the touch screen and the analog and power board.



## 2 Replacement Procedures

### Replacing the Touch Screen

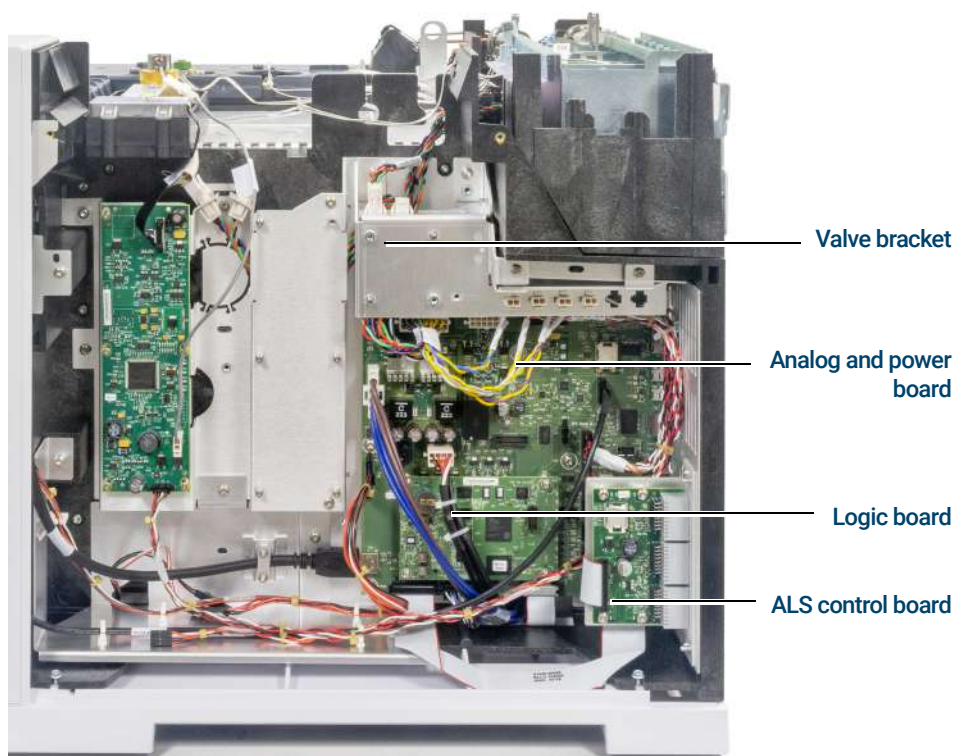


- 8 Detach the power cable from the analog and power board.
- 9 Free the disconnected power cables from the white plastic cable stays in the base of the GC.
- 10 Disconnect the data cable from the analog and power board.
- 11 Remove the five T-20 Torx touch screen mounting screws.
- 12 Use a 1/4" nut driver to remove the touch screen base nut.
- 13 Slide the touch screen out from the front of the GC.
- 14 Reassembly is the reverse of the removal process.

## Replacing the Analog and Power Board

To access the analog and power board, you must first remove these components:

- The ALS control board
- The logic board
- The valve bracket.



- 1 Prepare the GC for service. See [Prepare GC for Service](#).

### WARNING

#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

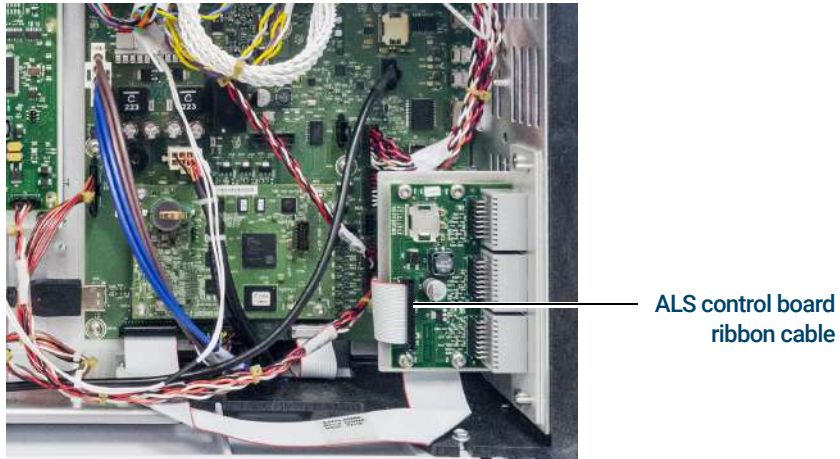
Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the detector top cover, pneumatics cover, electronics cover, upper back panel, lower back panel, and right side panel.

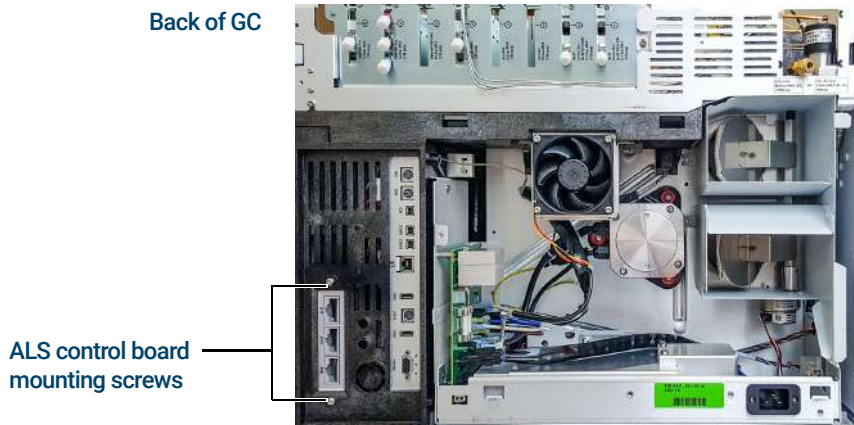
## 2 Replacement Procedures

### Replacing the Analog and Power Board

- 5 Disconnect the ALS Control Board ribbon cable

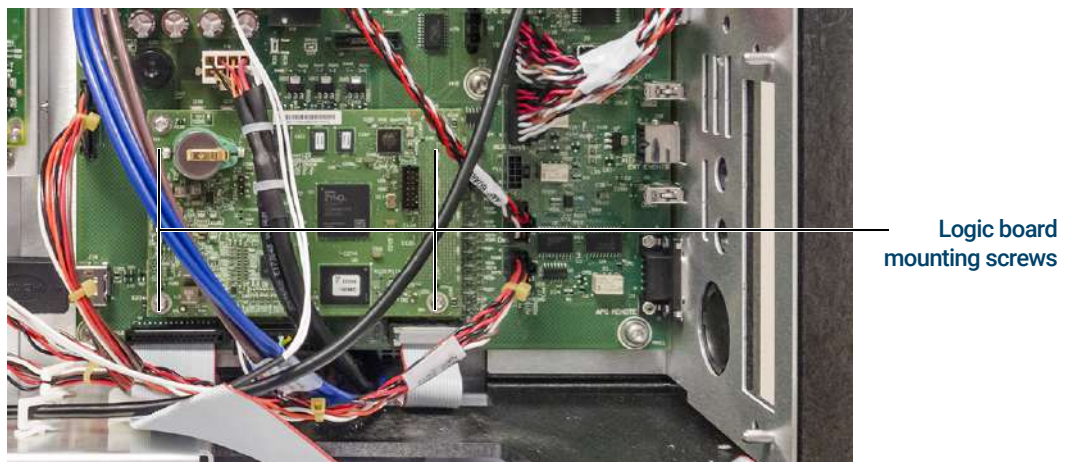


- 6 Remove the two T-20 Torx screws to disconnect the ALS control board from the GC.



- 7 Remove the ALS Control Board from the GC.

- 8 Remove the four T-10 Torx mounting screws from the logic board.



- 9 Remove the logic board from the GC.



## 2 Replacement Procedures

### Replacing the Analog and Power Board

- 10 Remove the four T-20 Torx valve bracket mounting screws.



- 11 Disconnect the power cable connecting the valve bracket to the GC.
- 12 Remove the valve bracket from the GC.
- 13 Disconnect all fourteen connections from the analog and power board.

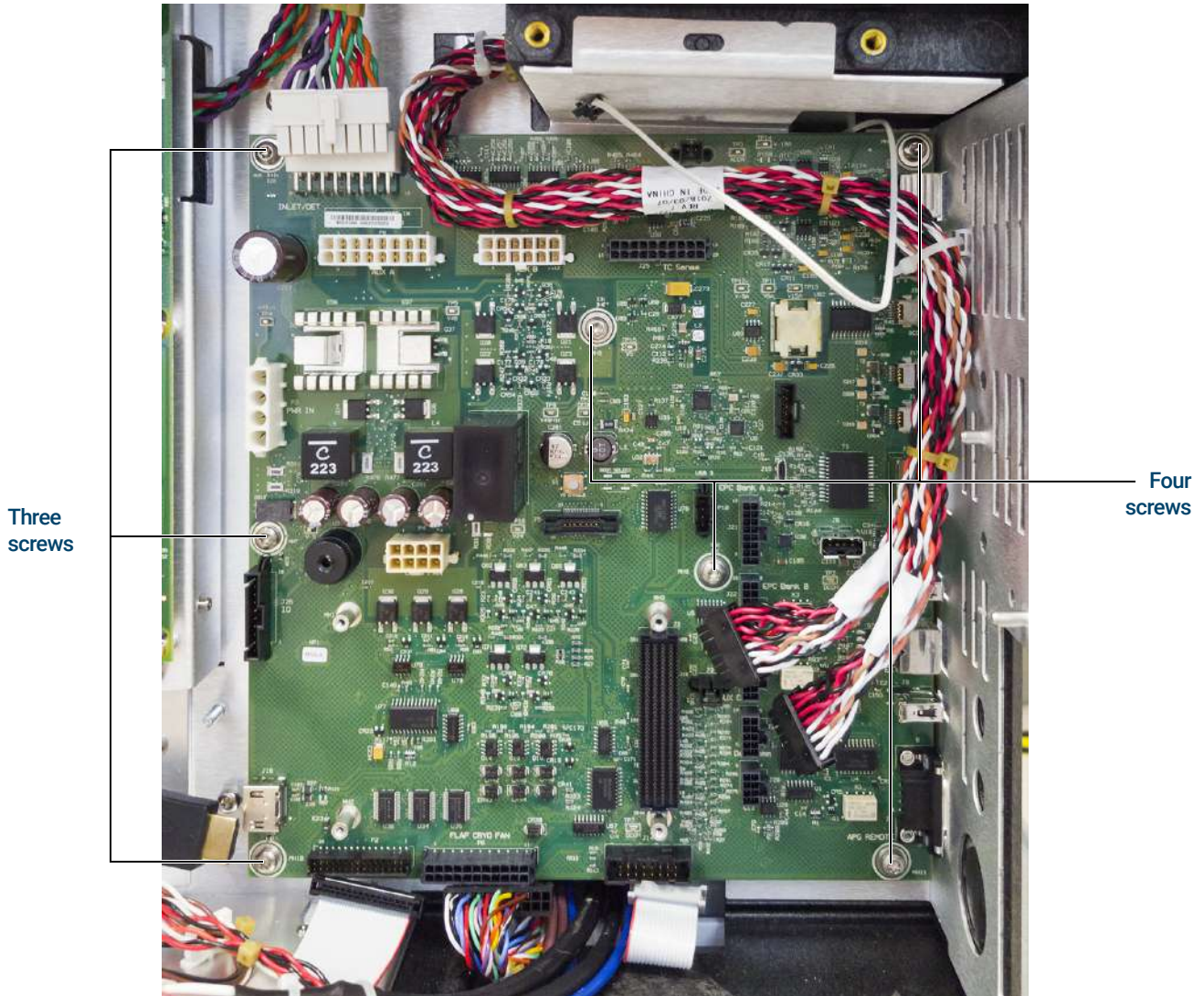




## 2 Replacement Procedures

### Replacing the Analog and Power Board

14 Remove seven T-20 Torx screws.



15 Remove the analog and power board from the GC.

16 Reassembly is the reverse of the removal process.

## Replacing the SSL Inlet Weldment

- 1 Prepare the GC for service. See **Prepare GC for Service**.

### WARNING

#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 Remove the detector top cover and the pneumatics cover.
- 4 From inside the oven, remove the column and nutwarmer. If the column has a column adapter, remove it.
- 5 Rotate the locking tab to release the top weldment assembly from the split/splitless inlet.
- 6 Disconnect the heater/sensor leads from the connector to the left of the inlet carrier.
- 7 Disconnect the split vent line and remove from the chassis slot leading to the flow module.



- 8 Use a Torx T-20 screwdriver to loosen the three captive screws that attach the inlet weldment to the top of the inlet carrier.

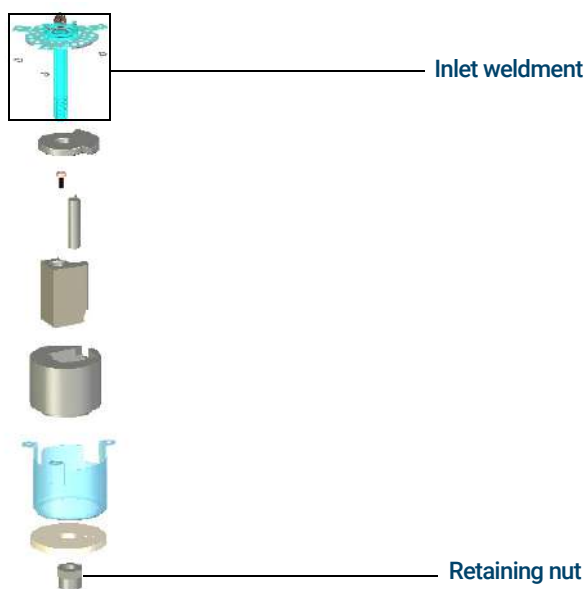
## 2 Replacement Procedures

### Replacing the SSL Inlet Weldment

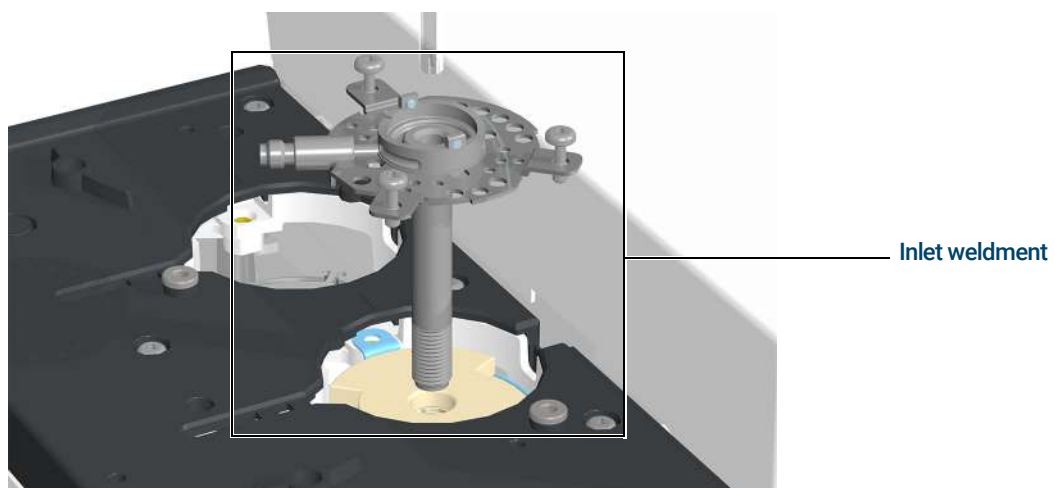
- 9 Slide the inlet assembly up out of the inlet carrier.



- 10 Remove the retaining nut from the bottom of the split / splitless inlet body assembly.



- 11 Pull the inlet weldment up out of the assembly.



- 12 Reassembly is the reverse of the removal process.

## Replacing the COC Inlet Weldment

- 1 Prepare the GC for service. See **Prepare GC for Service**.

### WARNING

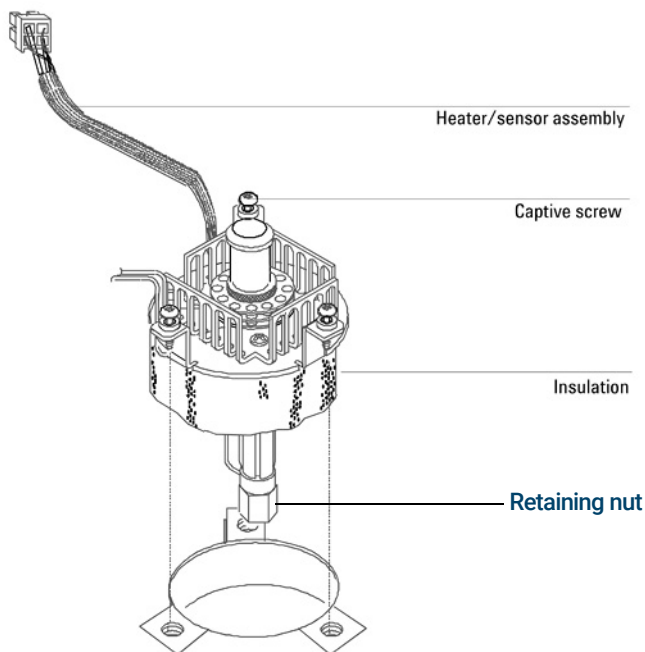
#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 Remove the detector top cover and the pneumatics cover.
- 4 From inside the oven, remove the column. If the column has a column adapter, remove it.
- 5 Disconnect the heater/sensor leads from the connector to the left of the inlet carrier.
- 6 If necessary, remove the septum nut, cooling tower and/or needle guide to provide access to the two screws in the top of the cooling fin.
- 7 Remove the captive screws securing the cooling fin to the inlet weldment and remove the fin.

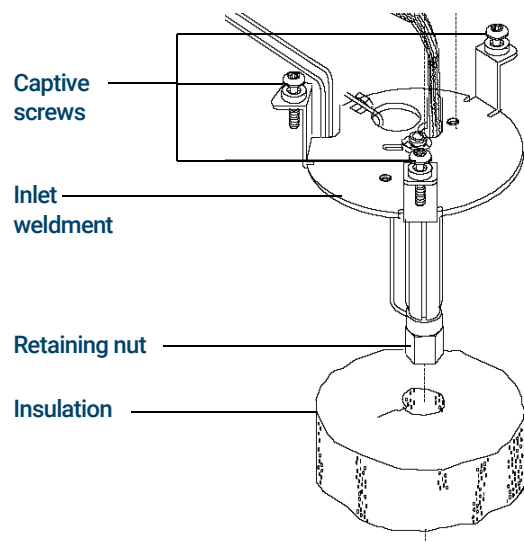


- 8 Use a Torx T-20 screwdriver to loosen the three captive screws that attach the inlet weldment to the top of the inlet carrier.
- 9 Slide the inlet up out of the inlet carrier.
- 10 Slide the insulation sleeve off the bottom of the inlet to provide clear access to the retaining nut at the bottom of the inlet assembly.

## 2 Replacement Procedures

### Replacing the COC Inlet Weldment

11 Remove the retaining nut and slide the inlet weldment up out of the assembly.



12 Reassembly is the reverse of the removal process.

## Replacing the Purged Packed Inlet Weldment

- 1 Prepare the GC for service. See **Prepare GC for Service**.

### WARNING

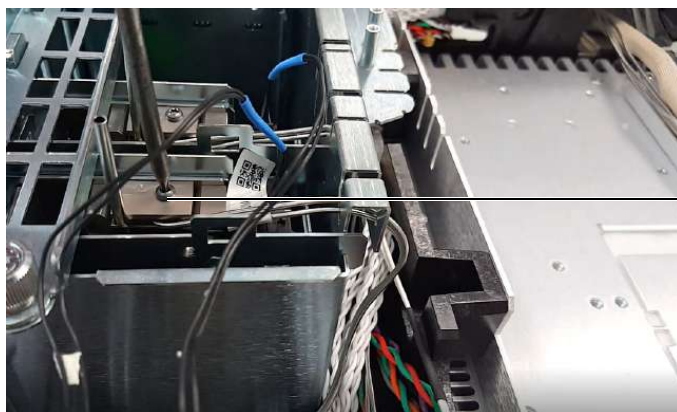
#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 Remove the detector top cover and the pneumatics cover.
- 4 Remove the inlet liner.
- 5 From inside the oven, remove the column from the inlet.
- 6 Remove the insulation cup from around the base of the inlet.
- 7 Disconnect the heater/sensor leads from the connector to the left of the inlet carrier.
- 8 Remove the T-10 Torx screw to disconnect the tubing connector block on the top of the flow module.



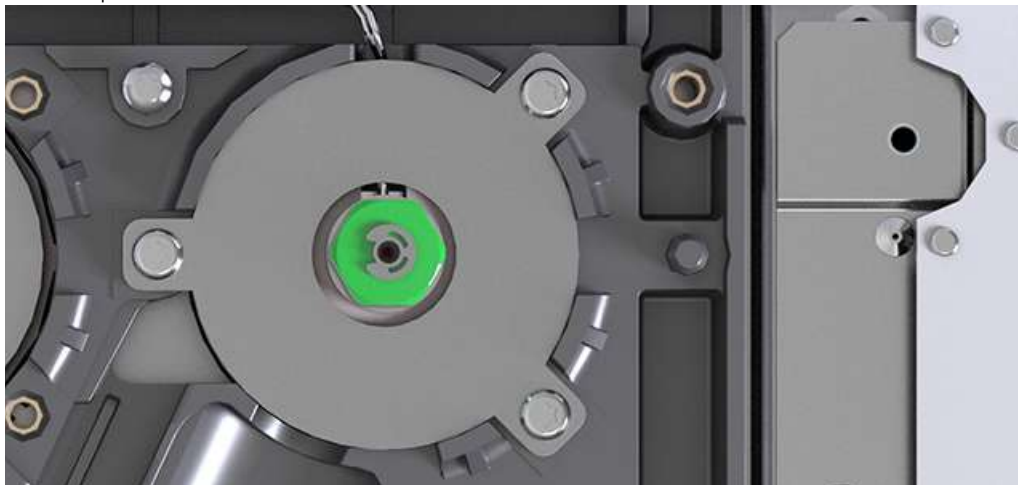
Screw



## 2 Replacement Procedures

### Replacing the Purged Packed Inlet Weldment

- 9 Use a Torx T-20 screwdriver to loosen the three captive screws that attach the inlet weldment to the top of the inlet carrier.



- 10 Slide the inlet assembly up out of the inlet carrier.

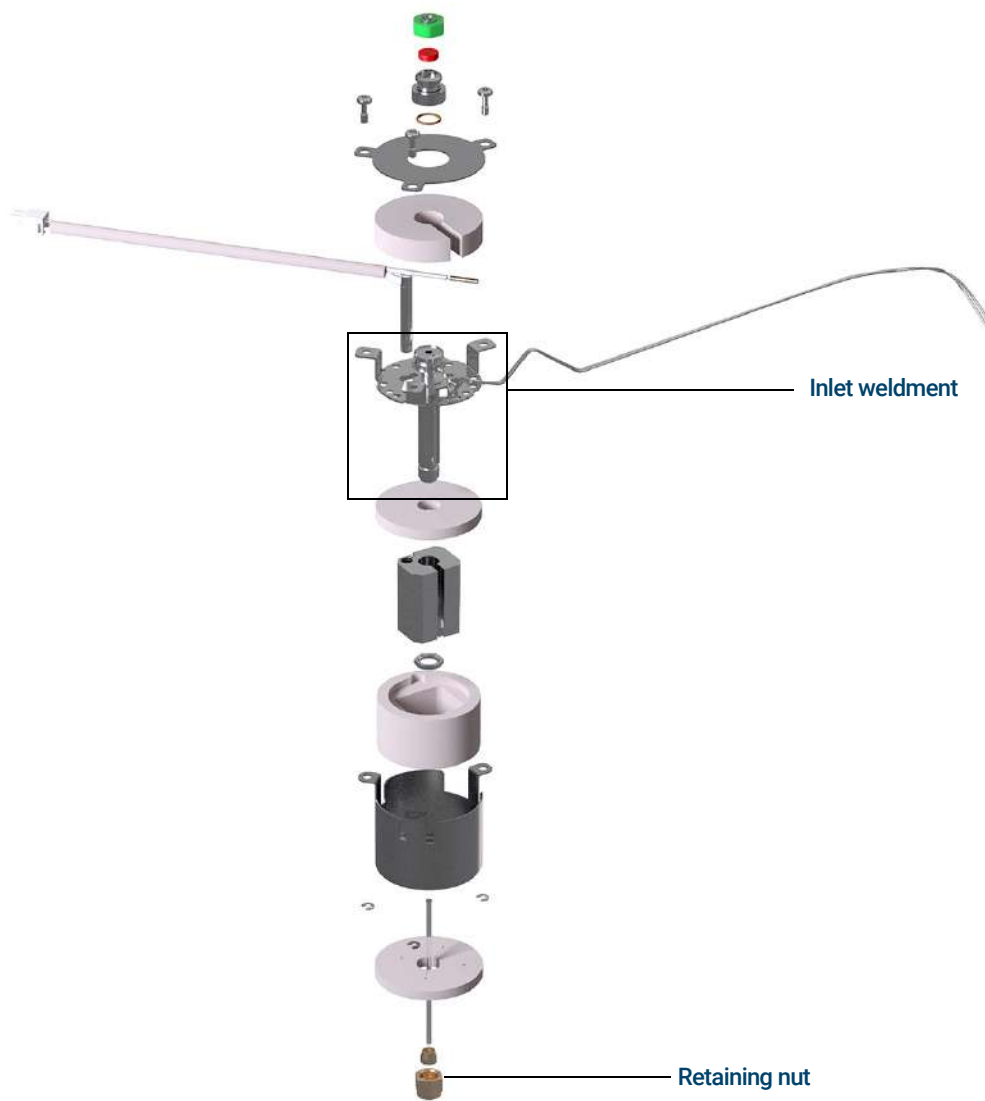


Retaining nut

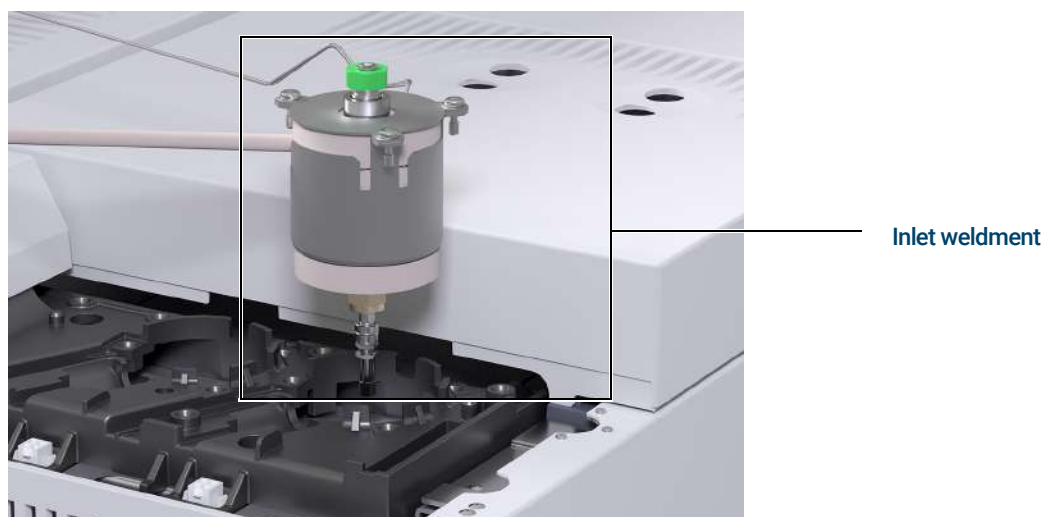
## 2 Replacement Procedures

### Replacing the Purged Packed Inlet Weldment

11 Remove the retaining nut and slide the inlet weldment up out of the assembly.



12 Reassembly is the reverse of the removal process.





# Replacing the SSL/MMI Split Vent Trap Assembly

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

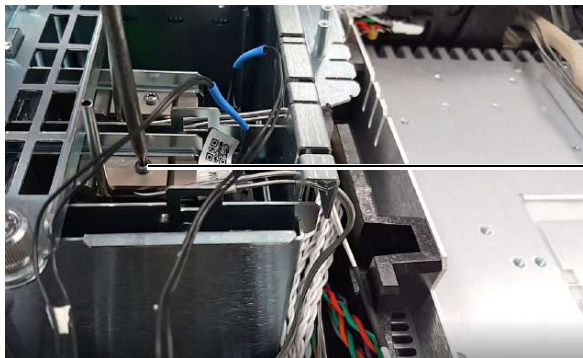
Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 Remove the top detector cover and top pneumatics cover.
- 4 Rotate the locking tab to release the top weldment assembly from the split/splitless inlet.



Locking tab

- 5 Remove the Torx T-10 flow module mounting screw to disconnect the gas supply tubing from the flow module.



EPC connector block screw

## CAUTION

Be careful when moving any wiring or tubing that interferes with the removal of the assembly.

- 6 Remove the top weldment assembly.
- 7 Reassembly is the reverse of the removal process.

# Replacing Detector Interface Boards

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

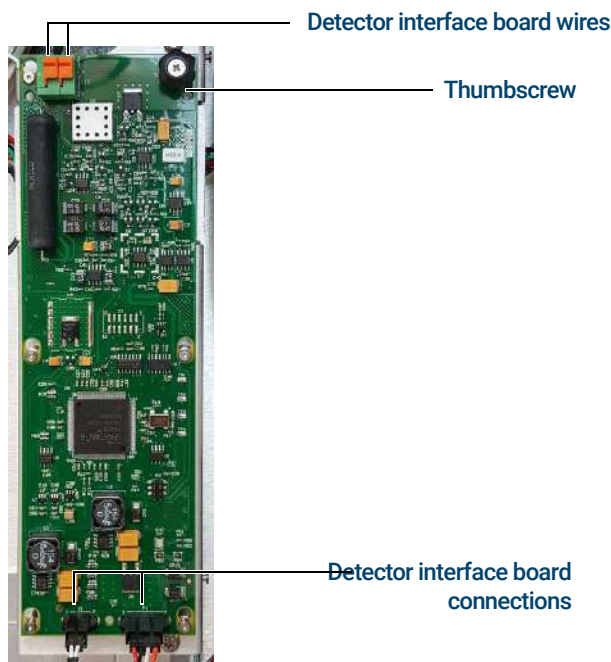
### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the detector top cover, pneumatics cover, electronics cover, and right side panel.



- 5 Disconnect the two plugs near the bottom of the detector interface board.
- 6 Remove the two wires from the top of the detector interface board by pulling down on the orange tab while lifting the wire.
- 7 Remove the thumbscrew in the top-right corner of the detector interface board.
- 8 Slide the detector interface board down to unseat it from the mounting pins.
- 9 Remove the detector interface board from the GC.
- 10 Reassembly is the reverse of the removal process.

## Replacing EPC Modules

- 1 Prepare the GC for service. See **Prepare GC for Service**.

### WARNING

#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 Remove the top detector cover and top pneumatics cover.
- 4 Remove the thumbscrew from the EPC module bracket.
- 5 Remove the T-10 Torx screw holding the tubing to the EPC module in place.



Screw

- 6 Remove all 1/8 inch Swagelok gas supply tubing connections from the EPC module.
- 7 Lift the EPC module up and remove the communication bus connector.
- 8 If an electrical connector is attached to the EPC module, split vent valve or other type of valve, remove it.
- 9 Remove the EPC module from the GC by lifting straight up.
- 10 Install the new module.
- 11 If the EPC module has a split vent valve, plug it in.
- 12 Remove the O-rings for the pneumatic tubing blocks.
- 13 Clean the sealing surface under the O-rings with a lint-free cloth.
- 14 Install new O-rings.
- 15 Install the new pneumatic tubing blocks and tighten the screws.

## Replacing the Oven Flapper Assembly

- 1 Prepare the GC for service. See **Prepare GC for Service**.

### WARNING

#### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

### CAUTION

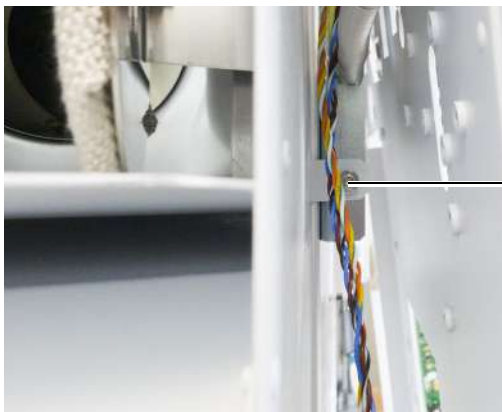
Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the detector top cover, electronics cover, pneumatics cover, upper back panel, lower back panel, and left side cover or side carrier if present.
- 5 Disconnect the flapper motor power connector.



Flapper motor power connector

- 6 Remove the flapper assembly mounting screw on the side of the GC.

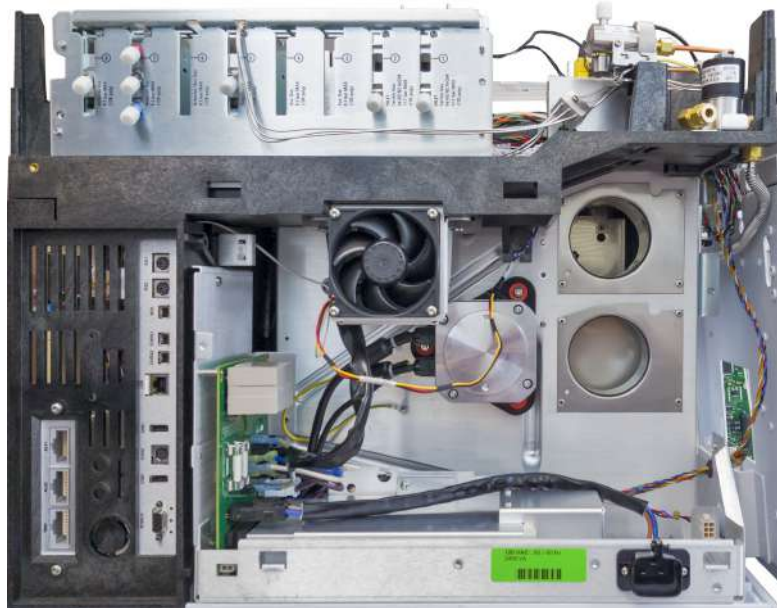


Flapper assembly mounting screw

## 2 Replacement Procedures

### Replacing the Oven Flapper Assembly

- 7 From behind the GC, slide the flapper assembly to the right to dislodge it from the flapper assembly mounting pins, then pull the flapper assembly straight out and away from the GC. The GC is shown below with the flapper assembly removed.



Rear of GC

- 8 Reassembly is the reverse of the removal process.

# Replacing the Oven Fan AC Motor

- 1 Prepare the GC for service. See **Prepare GC for Service**.

## WARNING

### Hazardous Voltages

Unplug the power cord before starting any service procedure. The GC is energized even when the power switch is turned off. Hazardous voltages may be present anywhere in the GC when the power cord is connected to mains voltage.

## CAUTION

Components can be damaged by static electricity. Be sure to wear an ESD strap grounded to the GC chassis while performing this procedure.

- 2 Remove any ALS injector and tray.
- 3 If an MS instrument is connected to the GC, vent and disconnect it.
- 4 Remove the right-side cover, lower-back panel and upper-back panel.
- 5 At the front of the GC, remove any components that obstruct access to the oven fan. This can include:
  - column(s)
  - column hanger(s)
  - inlet/detector insulation cups
- 6 Disconnect the oven from the analog and power board by disconnecting the plug.



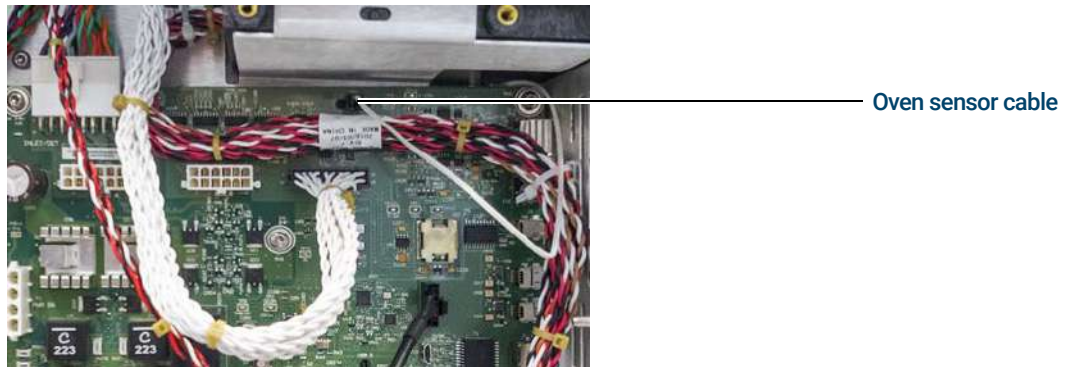
Oven fan plug to  
analog and power  
board



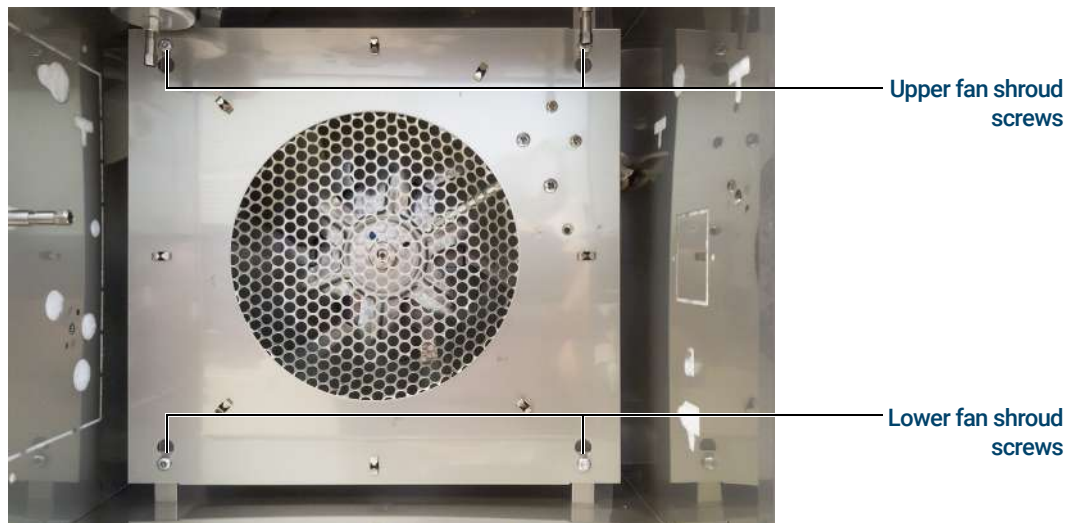
## 2 Replacement Procedures

### Replacing the Oven Fan AC Motor

- 7 Disconnect the oven sensor cable from the analog and power board.



- 8 Feed the oven sensor cable back to the rear of the GC.
- 9 Disconnect the oven heater power leads from the AC board.
- 10 Slide the black insulating sleeve off of the two oven heater power leads.
- 11 From inside the oven, remove the two lower screws securing the oven shroud.



#### NOTE

The screws that hold the oven shroud in place are special stainless steel screws and must not be confused with any other screws.

- 12 Loosen, but do not remove, the two upper screws securing the oven shroud.

#### NOTE

Be very careful to not disturb the oven temperature sensor. It is fragile and easily damaged. Also, its physical location is critical to proper oven temperature control. Do not change its position in any way.

- 13 Lift the oven shroud up and over the upper screws.

#### NOTE

Connectors for the oven heater wires and for the oven sensor must be worked through the access hole at the rear of the oven with care to prevent damage. There is a plug of insulation which may fall from the access hole during this process. Keep this insulation plug, as it must be replaced in reassembly from the rear of the GC.

## 2 Replacement Procedures

### Replacing the Oven Fan AC Motor

- 14 Gently pull the oven shroud out of the front of the oven. This will draw the two oven heater power leads and the oven sensor cable through the rear wall of the oven.
- 15 Inspect the oven heater and its supporting circular quartz glass rod. They must be replaced if they are damaged.
- 16 Before removing the oven fan, note the hub's physical location on the fan motor shaft so that you can return it to the same position during reassembly.

#### CAUTION

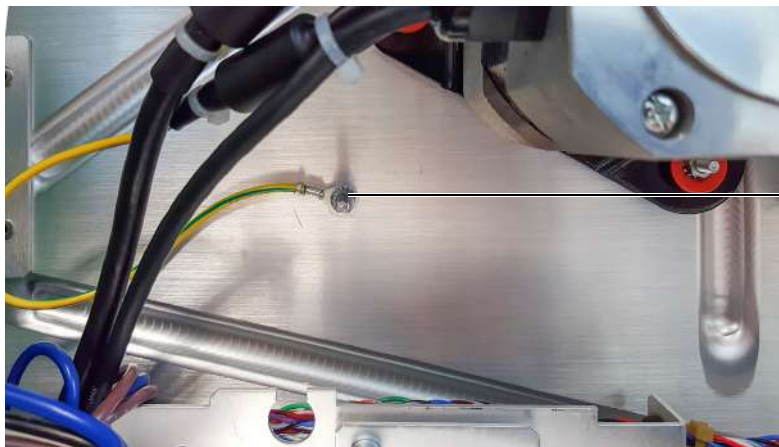
**Be careful not to bend the fan blades while loosening the setscrew or pulling the fan from the shaft.**

- 17 Remove the fan blades by loosening the 5/32-inch Allen setscrew on the fan hub.



Oven fan setscrew

- 18 Pull the fan directly forward, sliding it from the motor shaft.
- 19 Use a 7-mm wrench to disconnect the oven fan motor ground lead.



Oven fan motor ground lead

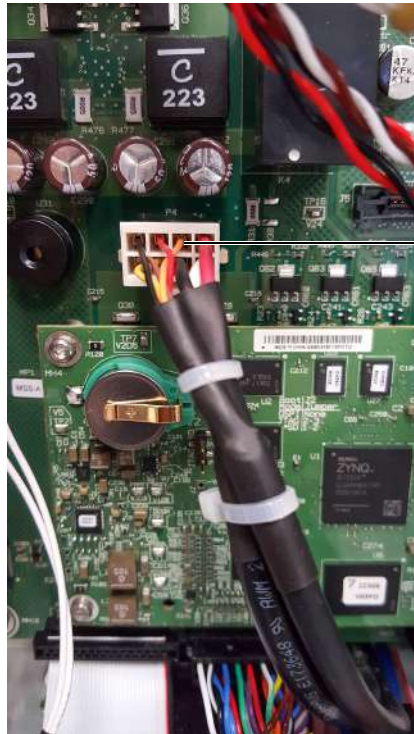
- 20 Work the oven fan power connector from the analog and power board back to the rear of the GC



## 2 Replacement Procedures

### Replacing the Oven Fan AC Motor

21 Disconnect the oven fan motor from the AC board.



Oven fan power connector

22 Remove the lower two 7-mm nuts with lock washers and cone washers.

#### WARNING

**The fan motor is heavy! Make sure you have a firm grip on the motor before removing it. Always handle the motor by the body, never by the shaft.**

23 Manually support the motor as the top nut is removed. Remove the top nut.

24 Pull the fan motor directly back and away from the GC.

25 Reassembly is the reverse of these steps with the following additions:

- All three motor mount bolts must have both an inner and an outer cone washer.
- The motor must be oriented so that the power cable exits toward the AC board.
- Reinstall the top nut first to support the weight of the fan motor.
- Check that the fan shaft is perpendicular to the back oven wall. If the shaft is not perpendicular, check the mounting nut tensions and confirm they are all seated properly in their cups.
- Make sure the fan's hub is slightly more than flush on the motor shaft. Some of the shaft should extend through the hub.
- Make sure the fan setscrew is tight against the flat side of the motor shaft.
- Replace the plug of insulation in the access hole at the back of the oven.

## 2 Replacement Procedures

### Replacing the Oven Fan AC Motor

## 3

# Illustrated Parts Breakdown

Inlets	44
Detectors	85
EPC Modules	124
Nickel Catalyst Accessory	125
Oven	127
Valves	133
Electronics and Fans	151
Covers	161
Tools	169

This section consists of parts lists and exploded views of the instrument modules. It is a major reference for part identification and part numbers.

For more complete listings of consumables and other customer-orderable parts, see the latest Agilent Parts Finder software version and IPB models for the 8890 GC. This manual typically includes only the most commonly-used consumable item part numbers, or the part numbers that ship in the default configuration.

In any table listing parts, a part with ID "NS" means the part is "not shown" in the accompanying graphics.

Quantities listed are the quantities required in the assembly, not necessarily the quantity to order (the quantity to order is not the same as the quantity used when the parts are sold in packages of more than one).

# Inlets

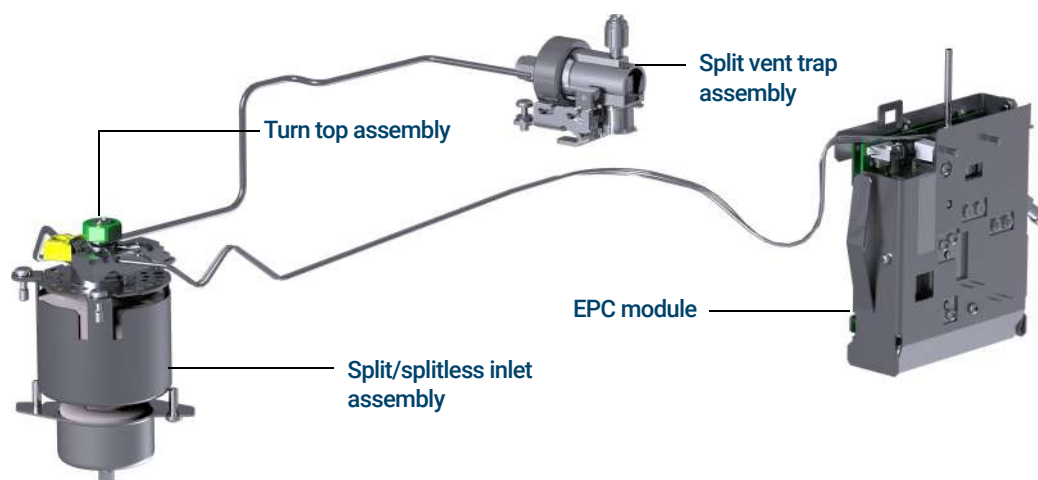
This section contains illustrated parts breakdowns for GC inlets and related components.

- Split/Splitless Inlet (SSL) 44
- Multi-Mode Inlet (MMI) 49
- Purged Packed Inlet (PP) 60
- Cool on-column inlet (COC) 65
- Programmed Temperature Vaporization Inlet (PTV) 70
- Volatiles Interface (VI) 80

## Split/Splitless Inlet (SSL)

Top level sub-assemblies for SSL inlet accessories:

- G3547A Capillary Split Splitless Inlet 0-100 psi with EPC, Kit
- G3548A Capillary Split Splitless Inlet 0-150 psi with EPC, Kit
- G3549A Inert Split Splitless Inlet 0-100 psi with EPC, Kit



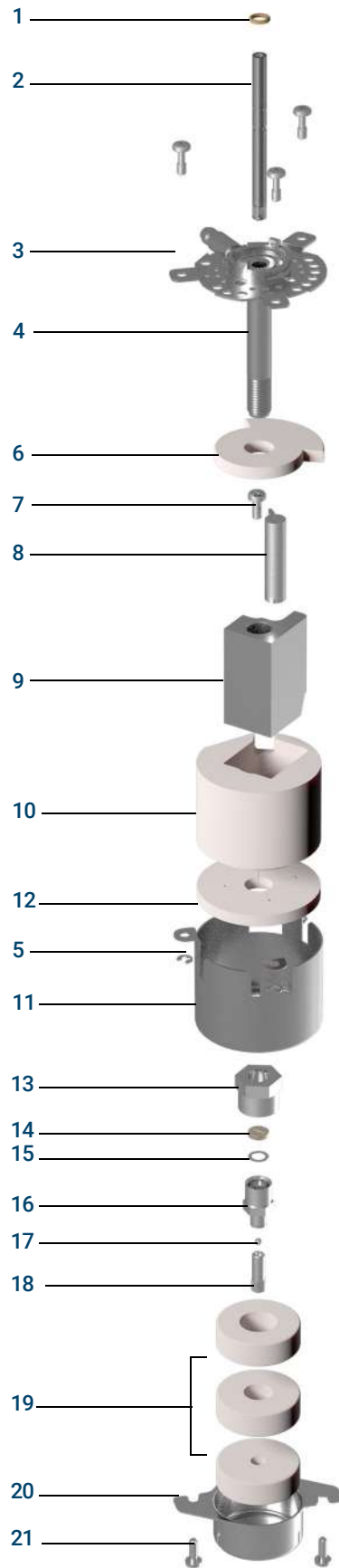
Description	Part Number
Split/Splitless EPC Module (100 psi STD and Inert)	G3450-67401
Split/Splitless EPC Module (150 psi)	G3450-67402

### 3 Illustrated Parts Breakdown Split/Splitless Inlet (SSL)

#### Inlet body

Item	Description	Part number	Qty
1	O-ring	G3901-50100	1
3	Captive Torx head screw, M4 x 12 mm	1390-1023	3
4	Cap Inlet Shell Weldment	G3452-80570	1
5	Retaining ring, e-style, 7.3 mm od SST	0510-1799	3
6	Top insulation	G1544-00010	1
7	Screw, M4 x 10 mm	0515-4788	1
8	Heater/Sensor assembly	G1530-67950	1
9	Heater block	G3452-20500	1
10	Insulation block	G3452-00006	1
11	SSL insulation cover	G3431-00005	1
12	Insulation bottom	G3432-00009	1
13	Retaining nut for heater block	G1544-20590	1
14	Gold plated seal	G1544-40885	1
15	Flat thrust washer	2190-0701	1
16	Reducing nut	18740-20800	1
18	Column nut (capillary, universal, 2/pk)	5181-8830	1
19	SSL Cup Insulation Assembly	G3450-60607	
21	Screw, machined, M4 x 12 mm, pan head	0515-2711	2

**3 Illustrated Parts Breakdown**  
Split/Splitless Inlet (SSL)



### 3 Illustrated Parts Breakdown Split/Splitless Inlet (SSL)

#### TurnTop assembly

Item	Description	Part number	Qty
1	Septum nut, standard	18740-60835	1
2	Non-stick bleed and temperature optimized (BTO) septa, 11 mm, 50/pk	5183-4757	1
3	Turn-top assembly, STD Turn-top assembly, inert	G3450-67576 G3450-67633	1
4	Partner screw	G4585-20086	1
5	O-ring, 12/pk	5180-4181	3

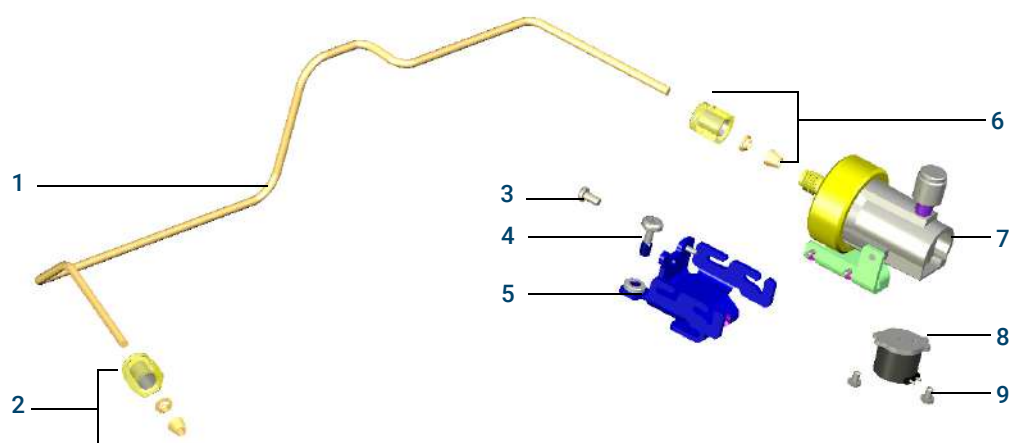




### 3 Illustrated Parts Breakdown Split/Splitless Inlet (SSL)

#### Split vent line assembly

Item	Description	Part number	Qty
1	Vent line tube assembly (not orderable)		1
2	Nut, ferrule set	5181-7481	1
	Split vent trap assembly (includes items 3, 4, 5, 7, 8, and 9)	G3450-60832	
3	Screw, M3 x 6 mm, SST-300, PSVT	0515-0680	1
4	Screw, captive, M4 x 12 mm	1390-1023	1
5	SVT base	G3450-00520	1
6	Nut, ferrule set	5181-7481	1
7	Split vent trap assembly (includes parts 8 and 9)		
8	Valve, low profile		
9	Screw, M2.5 x 4 mm, SST-302, PSVT,T-8		



#### Consumables and Parts for the Split/Splitless Inlet

For the most up-to-date and complete listing of consumables, see:

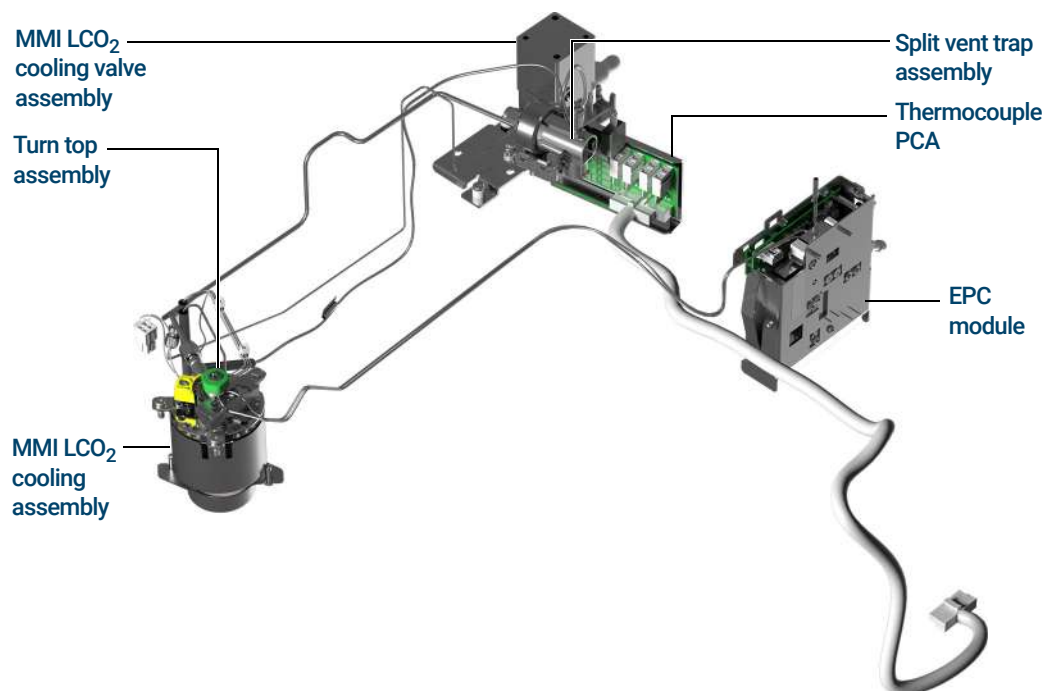
- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)

## Multi-Mode Inlet (MMI)

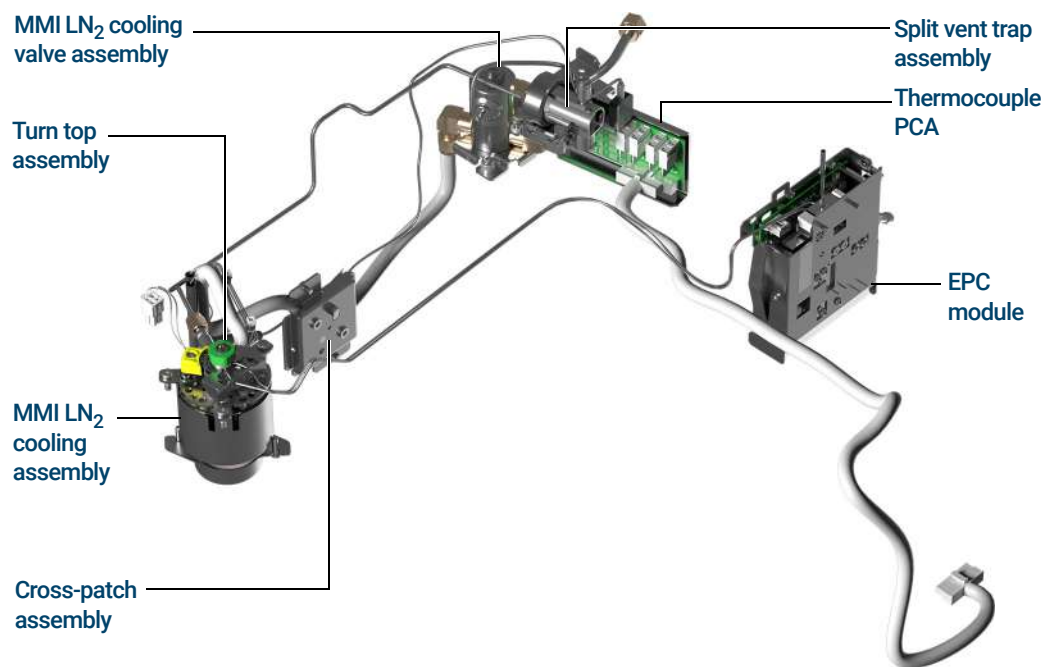
Top level sub-assemblies for the 8890 GC:

- G3551A Multi-Mode inlet, liquid carbon dioxide (LCO<sub>2</sub>), kit
- G3553A Multi-Mode inlet, liquid nitrogen - air cooling (LN<sub>2</sub>), kit



Description	Part Number
MMI EPC module	G3450-60404

### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)



Description	Part Number
MMI EPC module	G3450-60404

### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)

#### TurnTop assembly

Item	Description	Part number	Qty
	MMI TurnTop assembly (includes all parts below)	G3450-60576	1
1	Cap, Merlin Microseal, low pressure Cap, Merlin Microseal, general purpose	5181-3445 5182-3444	1
2	Merlin Microseal	5182-8815	1
3	Septum nut, standard	18740-60835	1
4	Turn-top assembly, STD Turn-top assembly, inert	G3450-67576 G3450-67633	1
6	Partner screw	G4585-20086	1
7	O-ring, 12/pk	0905-1493	3



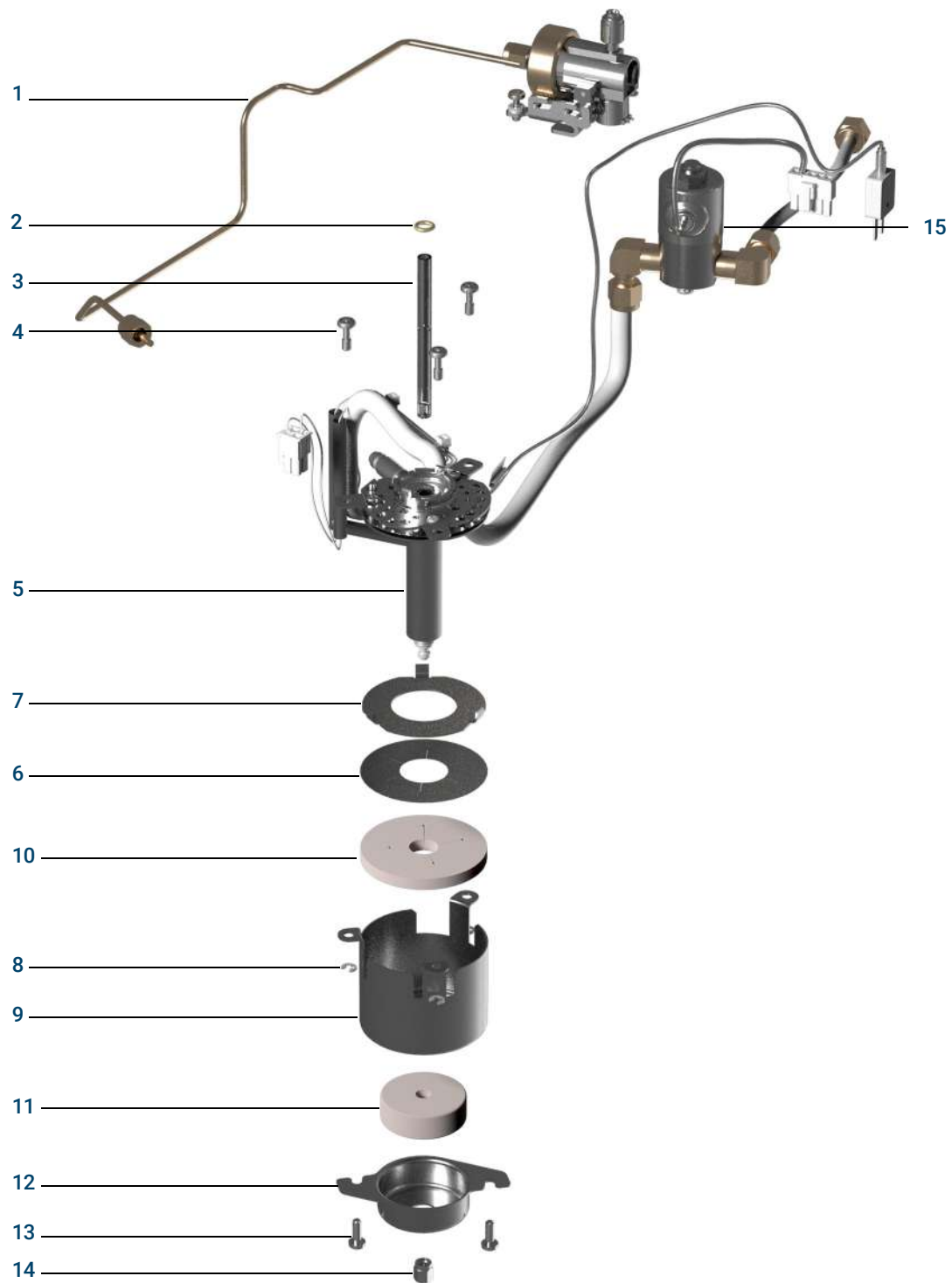
### 3 Illustrated Parts Breakdown

#### Multi-Mode Inlet (MMI)

#### Multi-Mode Inlet - LN<sub>2</sub> Inlet Weldment

Item	Description	Part number	Qty
2	O-ring, 2-010, fluoroelastomer (5/pk)	5188-6405	1
4	Torx head screw, M4 x 12 mm	1390-1023	3
5	Multi-Mode LN <sub>2</sub> inlet assembly (includes parts 4, 6, 7, 8, 9, 10, and 14)	G3450-67082	1
11	Nut cup insulation	19243-00069	1
12	Lower insulation cup	G3450-00039	1
13	Screw, machined, M4x12 mm	0515-2711	2
14	Column adapter nut, graphite	G3510-20018	1
15	LN <sub>2</sub> MMI valve module See <a href="#">Multi-Mode Inlet - LN<sub>2</sub> Valve Module Kit</a> on page 57.	G3450-60085	1

### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)





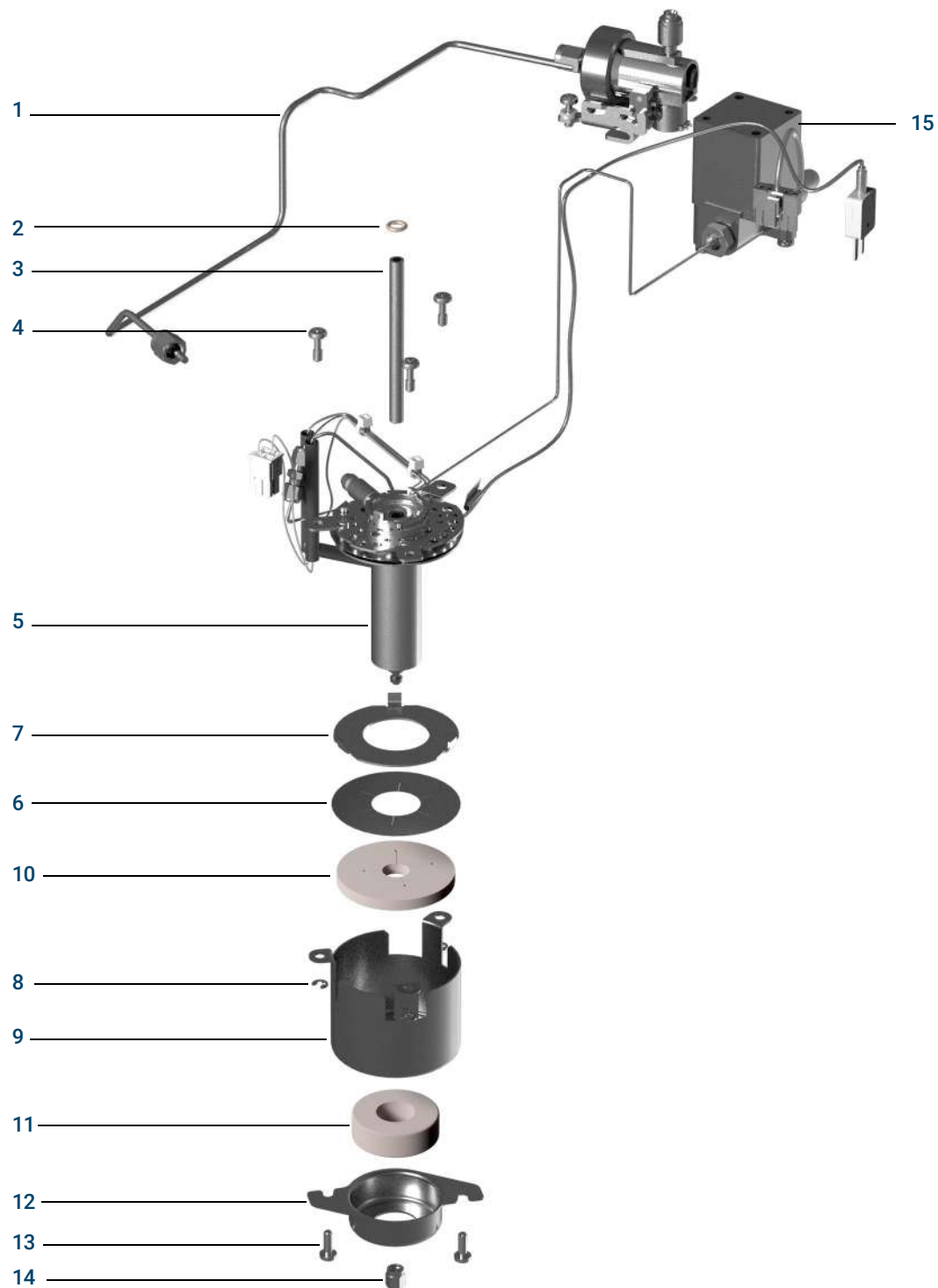
### 3 Illustrated Parts Breakdown

#### Multi-Mode Inlet (MMI)

#### Multi-Mode Inlet - LCO<sub>2</sub> Inlet Weldment

Item	Description	Part number	Qty
1	O-ring, 2-010, fluoroelastomer (5/pk)	5188-6405	1
3	Torx head screw, M4 x 12 mm	1390-1023	3
3	Multi-Mode LCO <sub>2</sub> inlet assembly (includes parts 4, 6, 7, 8, 9, 10, and 14)	G3450-60080	1
4	Nut cup insulation	19243-00068	1
5	Lower insulation cup	G3450-00040	1
6	Screw, machined, M4x12 mm	0515-2711	2
7	Column adapter nut, graphite	G3510-20018	1
8	LCO <sub>2</sub> MMI valve module See <a href="#">Multi-Mode Inlet - LCO<sub>2</sub> Valve Module Kit</a> on page 58.	G3450-63150	1

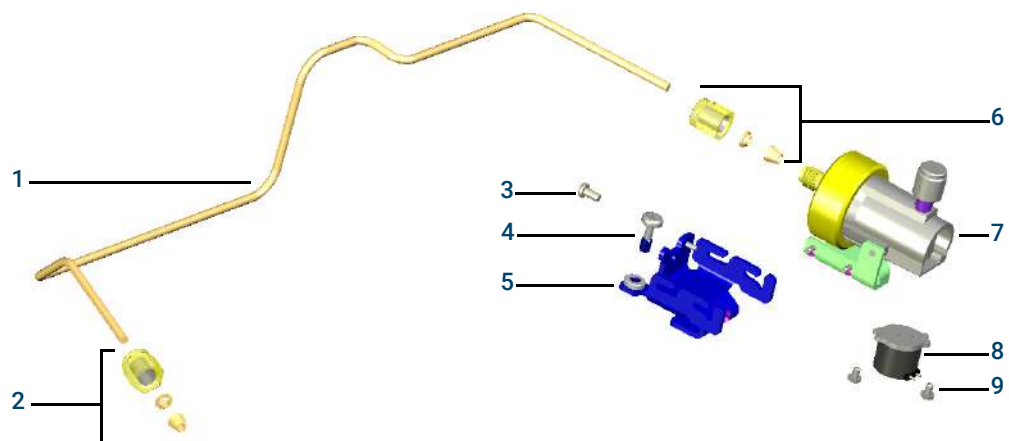
### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)



**3 Illustrated Parts Breakdown**  
Multi-Mode Inlet (MMI)

**Split vent line assembly**

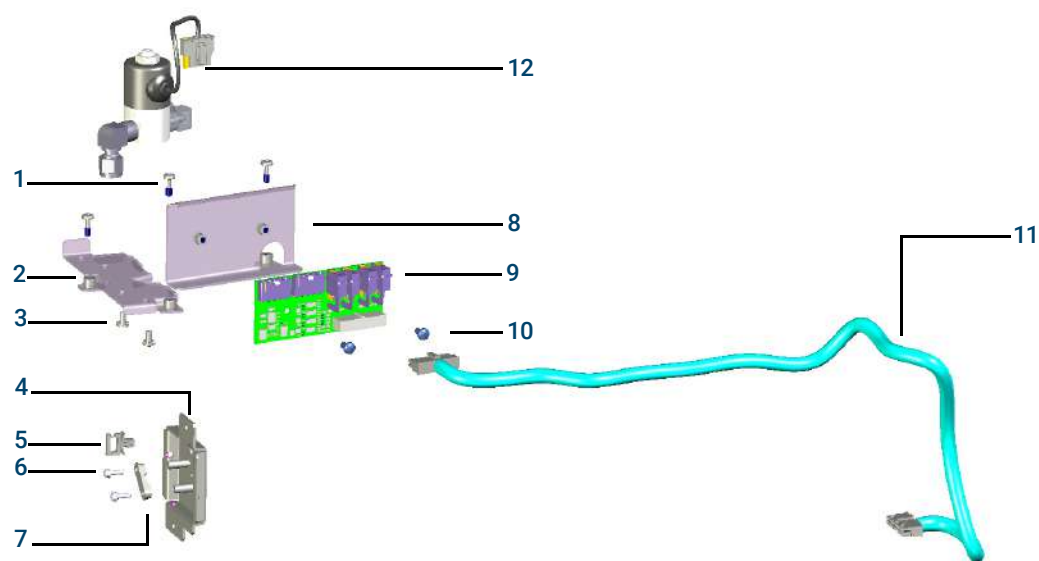
Item	Description	Part number	Qty
1	Vent line tube assembly	G3450-20516	1
2	Nut, ferrule set	5181-7481	1
	Split vent trap assembly (includes items 3, 4, 5, 7, and 8,)	G3450-60832	
3	Screw, M3 × 6 mm, SST-300, PSVT	0515-0680	1
4	Screw, captive, M4 × 12 mm	1390-1023	1
5	SVT base	G3450-00520	1
6	Nut, ferrule set	5181-7481	1



### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)

#### Multi-Mode Inlet - LN<sub>2</sub> Valve Module Kit

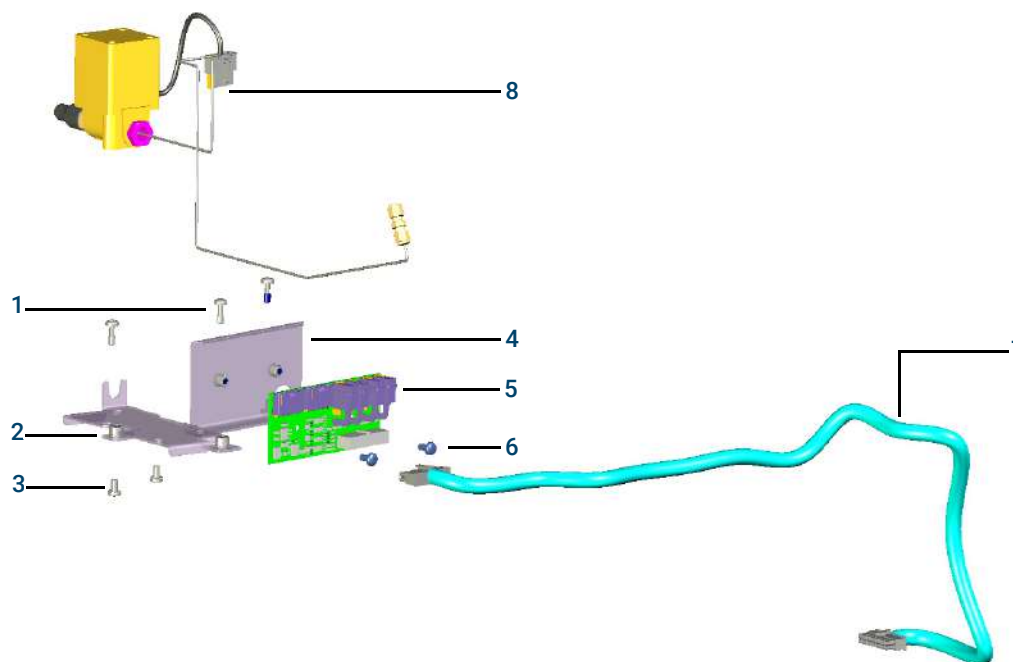
Item	Description	Part number	Qty
1	Captive screw, M4 × 12 mm	1390-1023	3
2	Dual valve cryo bracket	G3450-00800	1
3	Screw, 8-32 × .3125 in, pan head, Pozidriv	2510-0043	2
4	Inlet thermocouple PCA bracket	G3450-00802	1
9	Inlet thermocouple PCA	G3450-61870	1
5	Screw, machine, M4 × 8 mm	0515-2113	2
6	AP to TC cable assembly	G3450-60560	1
12	8890 LN <sub>2</sub> valve module	G3450-67008	1



### 3 Illustrated Parts Breakdown Multi-Mode Inlet (MMI)

#### Multi-Mode Inlet - LCO<sub>2</sub> Valve Module Kit

Item	Description	Part number	Qty
1	Captive screw, M4 × 12 mm	1390-1023	3
2	Dual valve cryo bracket	G3450-00801	1
3	Screw, 8-32 × .3125 in, pan head, Pozidriv	2510-0043	2
4	Inlet thermocouple PCA bracket	G3450-00802	1
5	Inlet thermocouple PCA	G3450-61870	1
6	Screw, machine, M4 × 8 mm	0515-2113	2
7	AP to TC cable assembly	G3450-60560	1
8	8890 LCO <sub>2</sub> MMI valve module	G3450-67007	1



### 3 Illustrated Parts Breakdown

#### Multi-Mode Inlet (MMI)

#### Consumables and Parts for the Multimode Inlet

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

Split, splitless, direct, and direct connect inlet liners

Mode	Description	Deactivated	Part number
Split	Low-pressure drop, glass wool, single taper, 870 µL	Yes	5183-4647
Split	Glass wool, 990 µL	No	19251-60540
Split-Manual only	Empty pin and cup, 800 µL	No	18740-80190
Split-Manual only	Packed pin and cup, 800 µL	No	18740-60840
Splitless	Single taper, glass wool, 900 µL	Yes	5062-3587
Splitless	Single taper, no glass wool, 900 µL	Yes	5181-3316
Splitless	Dual taper, no glass wool, 800 µL	Yes	5181-3315
Splitless-Direct inject	2-mm id, quartz, 250 µL	No	18740-80220
Splitless-Direct inject	2-mm id, 250 µL	Yes	5181-8818
Direct inject - Headspace or purge and trap	1.5-mm id, 140 µL	No	18740-80200
Direct column connect	Single taper, splitless 4-mm id	Yes	G1544-80730
Direct column connect	Dual taper, splitless 4-mm id	Yes	G1544-80700

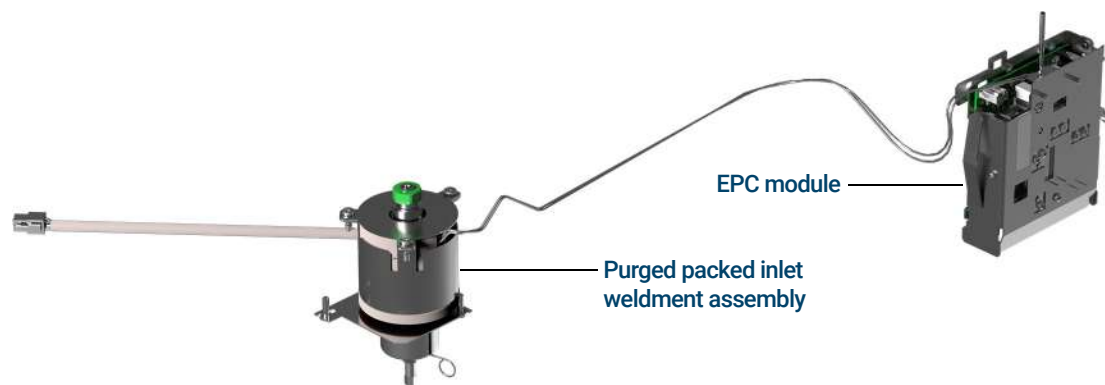
### 3 Illustrated Parts Breakdown Purged Packed Inlet (PP)

## Purged Packed Inlet (PP)

Top level subassemblies for Purged Packed inlet accessories:

- G2352A Purged-packed with EPC, Kit

Description	Part number
Purged packed inlet EPC module	G3450-67406

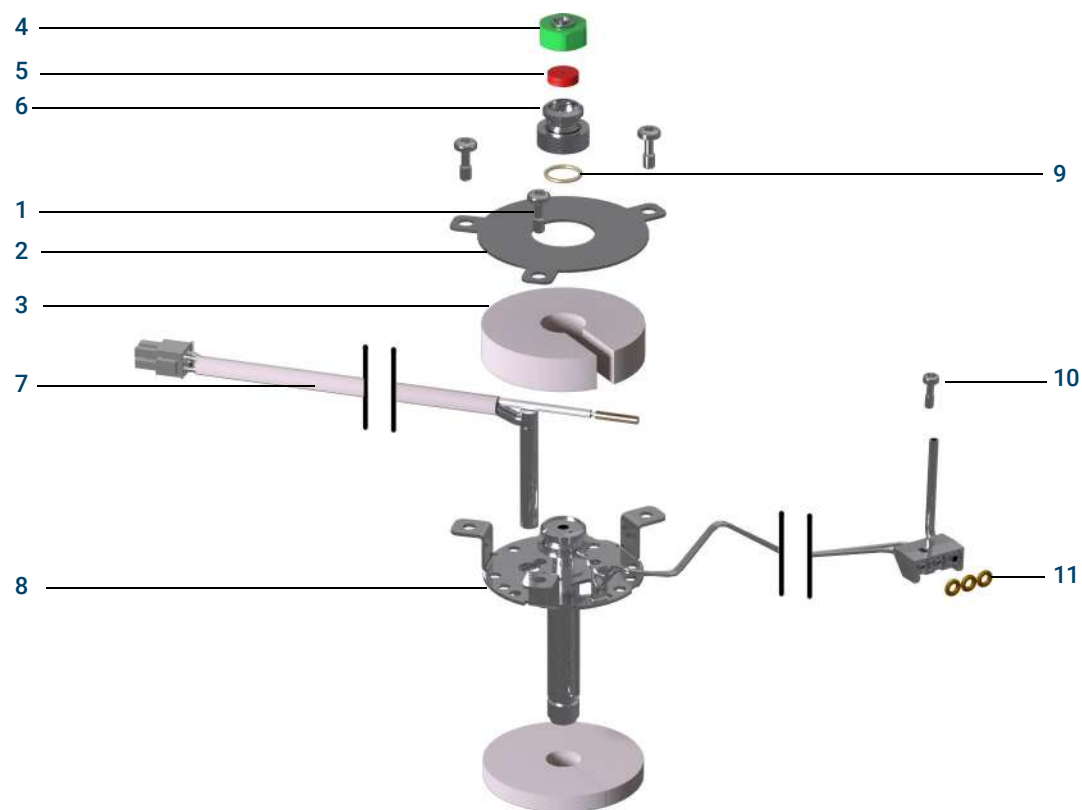




### 3 Illustrated Parts Breakdown Purged Packed Inlet (PP)

#### Purged Packed Inlet Upper Body

Item	Description	Part number	Qty
1	Screw, Torx T-20, M4 x 12 mm	1390-1023	3
2	Top cover plate	G1543-00085	1
3	Top insulation	G1543-00100	1
4	Septum nut	18740-60835	1
5	Septum, 11 mm, low bleed (50/pk)	5183-4757	1
6	Top insert weldment	19243-80570	1
7	Heater/Sensor assembly	G1543-61540	1
8	Inlet weldment	G3450-67572	1
9	Viton O-ring (12/pk)	5080-8898	1
10	Partner screw	G4585-20086	1
11	O-ring, (12/pk)	5180-4181	3



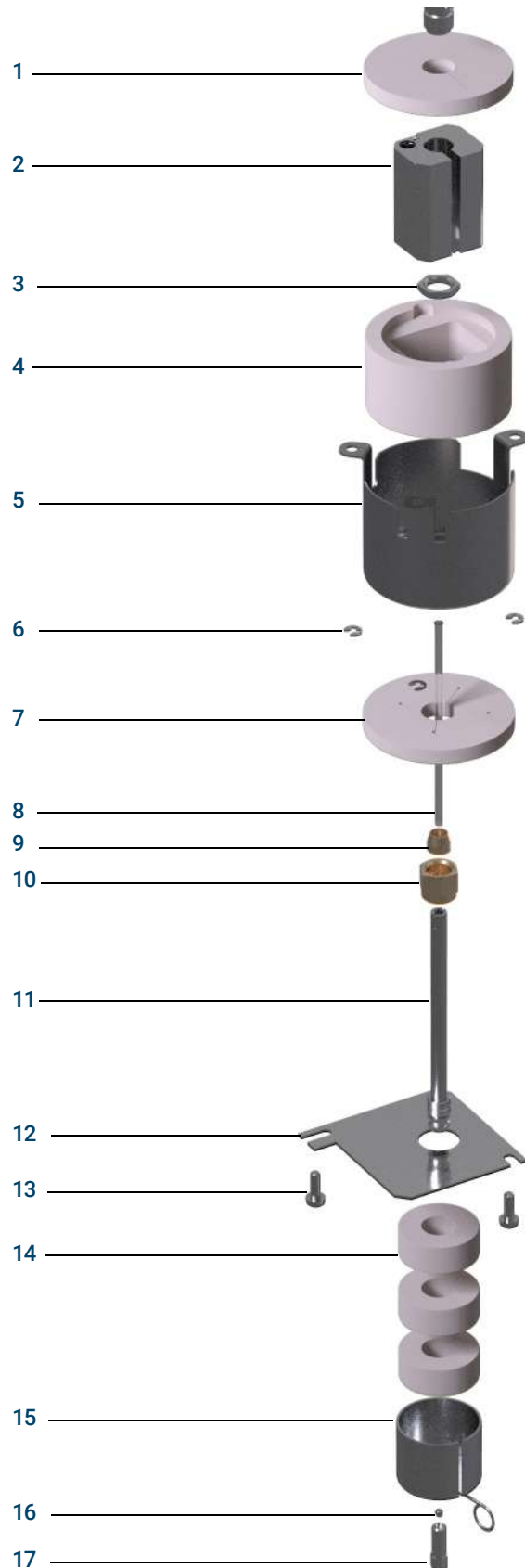
### 3 Illustrated Parts Breakdown

#### Purged Packed Inlet (PP)

#### Purged Packed Inlet Lower Body Parts

Item	Description	Part number	Qty
1	PP mid gasket insulation	G1543-00155	1
2	PP heater block	G1543-20765	1
3	Nut	G1543-20580	1
4	PP base insulation	G1543-00004	1
5	PP insulation cup	G1543-00005	1
6	Retaining ring	0510-1799	3
7	Oven top insulation	G3432-00003	1
8	Glass liner (25/pk)	5080-8732	1
9	Vespel ferrule (10/pk)	5180-4105	1
10	Swagelok nut, brass	0100-0056	1
12	Bottom plate for oven	G1543-00060	1
13	Screw, T-20, M4 x 12mm	0515-2711	2
14	Nut warmer insulation	19234-60715	3
15	Nut warmer insulating cup	19234-60700	1
16	Vespel graphite ball (for shipping)	G1544-20735	1
17	Column nut (capillary, universal, 2/pk)	5181-8830	1

### 3 Illustrated Parts Breakdown Purged Packed Inlet (PP)



### 3 Illustrated Parts Breakdown

#### Purged Packed Inlet (PP)

#### Consumables and Parts for the Purged Packed Inlet

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

Purged packed inlet parts

Description	Part number
Inlet kit, contains septa, O-rings, and inserts	5181-8837
Preventative maintenance kit	5188-6498

Purged packed liners and column adapters

Description	Part number
Glass liner, plain (25/pk)	5080-8732
Glass liner, deactivated (5/pk)	5181-3382
0.53-mm column adapter with liner	19244-80540
1/8-inch column adapter with liner	19243-80530
1/8-inch column adapter, no liner	19243-80510
1/4-inch column adapter with liner	19243-80540
1/4-inch column adapter, no liner	19243-80520

### 3 Illustrated Parts Breakdown

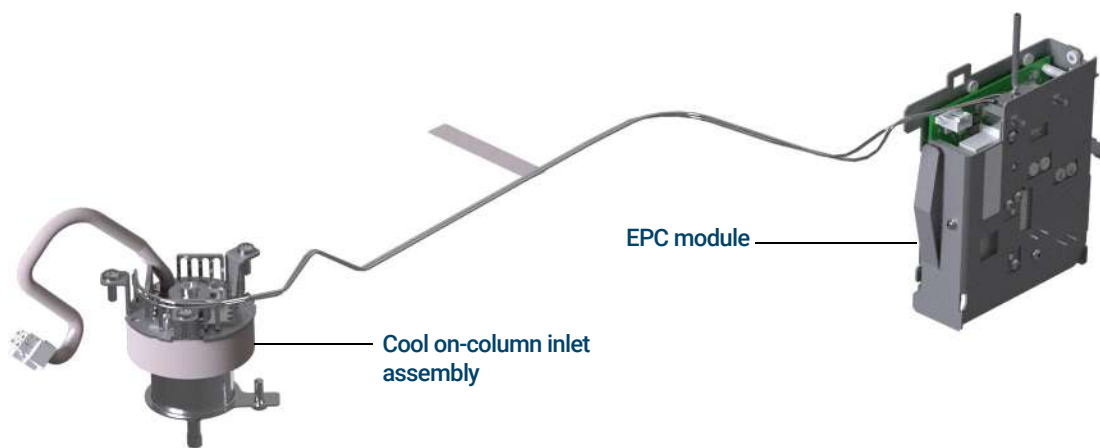
Cool on-column inlet (COC)

## Cool on-column inlet (COC)

Top level subassemblies for Cool on-column inlet accessories:

- G2359A Cool on-column inlet with EPC, Kit
- 19245-60590 for manual injection with a fused silica needle

Description	Part number
Cool On-column Inlet EPC module	G3450-67405



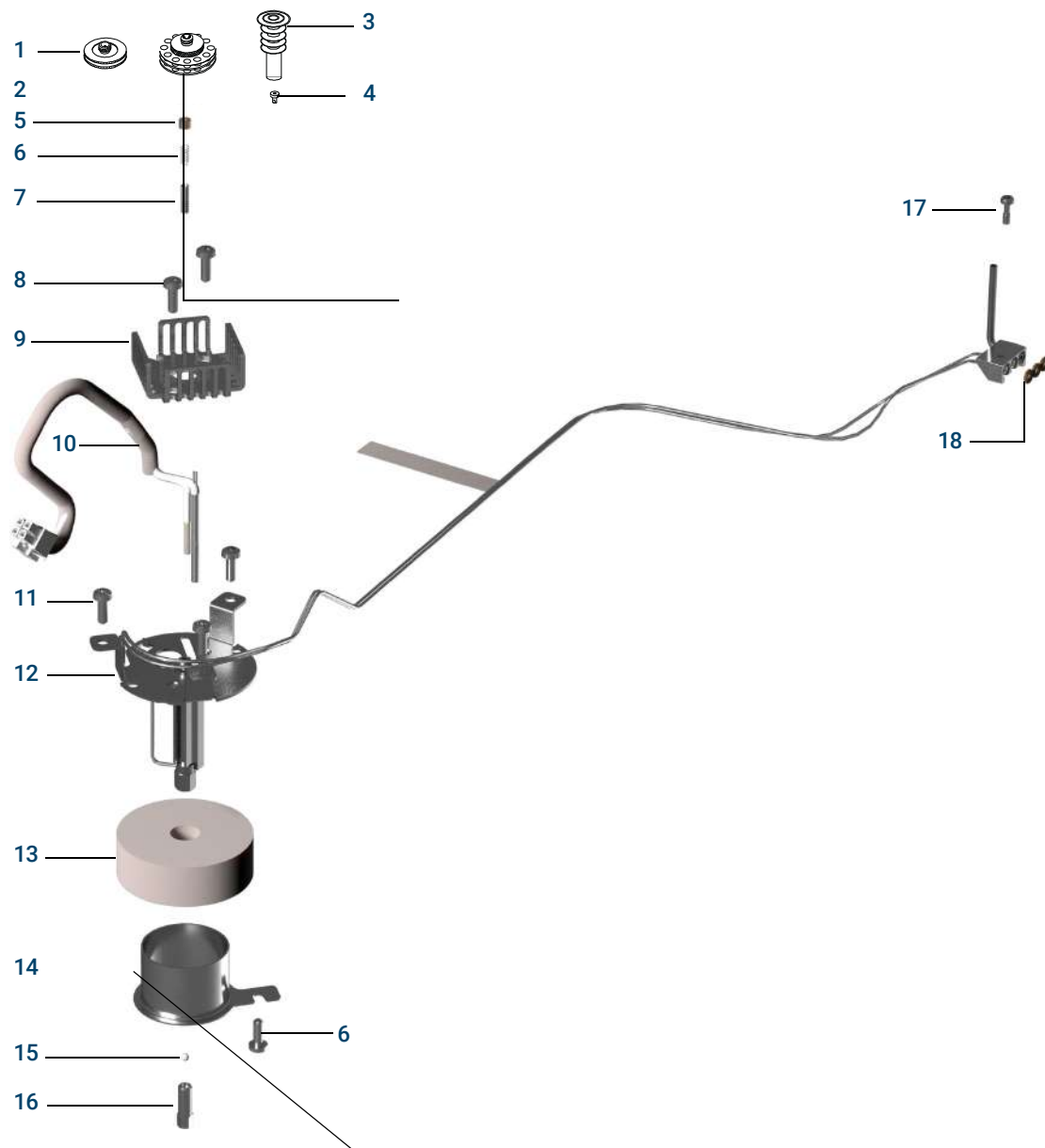
### 3 Illustrated Parts Breakdown

#### Cool on-column inlet (COC)

#### Inlet body

Item	Description	Part number	Qty
1	Septum nut base assembly, for .250/.320-mm columns	19245-80521	1
2	Septum nut base, for .530 mm columns	G1545-80520	1
3	Manual cooling tower assembly (optional), for .200 mm columns	19320-80625	1
4	Duckbill for use with cooling tower, 10/pk	19245-40050	1
5	Septum, single 4.8 mm orange	G1548-80010	1
6	PCOC spring	19245-60760	1
7	PCOC insert (identified by number of rings on insert)	See Tables	1
8	Screw, M4 × 12 mm long	0515-2711	3
9	Heatsink fin	G1545-00010	1
10	Heater/Sensor assembly	G1545-60520	1
11	Screw, M4 × 12 mm, T-20	0515-2496	3
12	Inlet weldment	G3450-67587	1
13	Inlet weldment insulation	G1545-20630	1
14	Cavity sleeve	19245-00060	1
15	Vespel graphite ball (for shipping)	G1544-201735	1
16	Capillary column nut	See Tables	1
17	Partner screw	G4585-20086	1
18	O-ring, 12/pk	5180-4181	3

### 3 Illustrated Parts Breakdown Cool on-column inlet (COC)





### 3 Illustrated Parts Breakdown

#### Cool on-column inlet (COC)

#### Consumables and Parts for the COC Inlet

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

**Table 2 Recommended septum nut and inserts for injections onto 0.53-mm fused silica columns**

Column type	Part number
Insert, fused silica, 0.53-mm id – no rings	19245-20580
Septum nut, 530 $\mu$ m	G1545-80520
Syringe barrel, removable needle, 5 $\mu$ L	5182-0836
Needle, 530 $\mu$ m (3/pk)	5182-0832
Plunger button, 10/pk, for manual injections using syringe barrel 5182-0836	5181-8866
On-column insert spring	19245-60760
Needle support assembly, 530 $\mu$ m, for 7683B injector	G2913-60977

**Table 3 Recommended septum nut and inserts for injections onto 0.53-mm aluminum-clad columns**

Column type	Part number
Insert, aluminum-clad, 0.53-mm id – 4 rings	19245-20780
Septum nut, 530 $\mu$ m	G1545-80520
Syringe barrel, removable needle, 5 $\mu$ L	5182-0836
Needle, 530 $\mu$ m (3/pk)	5182-0832
Plunger button, 10/pk, for manual injections using syringe barrel 5182-0836	5181-8866
On-column insert spring	19245-60760
Needle support assembly, 530 $\mu$ m, for 7683B injector	G2913-60977

**Table 4 Recommended parts for injections onto 0.32-mm fused silica columns**

Column type	Part number
Insert, fused silica, 0.32-mm id – 5 rings	19245-20525
Septum nut, 250/320 $\mu$ m	19245-80521
Syringe barrel, removable needle, 5 $\mu$ L	5182-0836
Needle, 320 $\mu$ m (3/pk)	5182-0831
Plunger button, 10/pk, for manual injections using syringe barrel 5182-0836	5181-8866
On-column insert spring	19245-60760
Needle support assembly, 250/320 $\mu$ m, for 7683B injector	G2913-60978

### 3 Illustrated Parts Breakdown

#### Cool on-column inlet (COC)

**Table 5 Recommended parts for injections onto 0.25-mm fused silica columns**

Column type	Part number
Insert, 0.25-mm id – 6 rings	19245-20515
Septum nut, 250/320 $\mu$ m	19245-80521
Syringe barrel, removable needle, 5 $\mu$ L	5182-0836
Needle, 250 $\mu$ m (3/pk)	5182-0833
Plunger button, 10/pk, for manual injections using syringe barrel 5182-0836	5181-8866
On-column insert spring	19245-60760
Needle support assembly, 250/320 $\mu$ m, for 7683B injector	G2913-60978

**Table 6 Recommended parts for injections onto 0.2-mm fused silica columns**

Description	Part number
Insert, fused silica, 0.20-mm id	19245-20510
Cooling tower assembly	19320-80625
Syringe barrel, for fused silica needle, 10 $\mu$ L	9301-0658
Replacement needles, fused silica, 0.18 mm (6/pk)	19091-63000
Replacement PTFE ferrule for fused silica syringe	0100-1389
Removable stainless steel needle syringe, 10 $\mu$ L	5182-9633
Replacement stainless steel needles, 0.23 mm (3/pk)	5182-9645
On-column insert spring	19245-60760

**Table 7 Recommended septa for the COC inlet**

Description	Part number
For 0.53-mm and 0.25/0.32-mm septum nuts	
5-mm solid septum for manual and automatic injection	5181-1261
5-mm long-life septum (50/pk)	5183-4762
5-mm advanced green septum (50/pk)	5183-4760
5-mm, high-temperature, low-bleed septum (50/pk)	5183-4758
5-mm through-hole septum for automatic injection (25/pk)	5181-1260
For the duckbill septum	
Duckbill septum for manual injection only (must use cooling tower with duckbill) (10/pk)	19245-40050

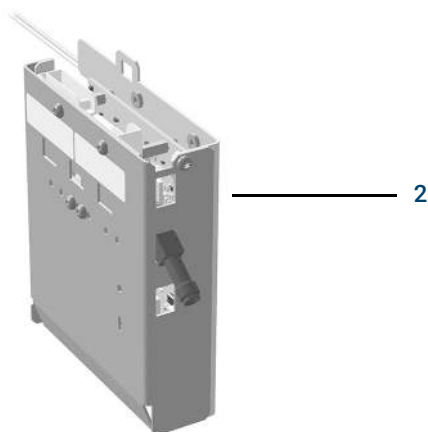
### 3 Illustrated Parts Breakdown Programmed Temperature Vaporization Inlet (PTV)

## Programmed Temperature Vaporization Inlet (PTV)

Top level subassemblies for PTV inlet accessories:

- G3554A Septumless head PTV, LC02 Accessory with EPC, Kit
- G3555A Septum head PTV, LC02 Accessory with EPC, Kit
- G3556A Septumless head PTV, LN2 Accessory with EPC, Kit
- G3557A Septum head PTV, LN2 Accessory with EPC, Kit

Item	Description	Part number	Qty
1	PTV Inlet chassis	G3450-20108	1
2	PTV EPC assembly, 100 PSI	G3450-67409	1



### 3 Illustrated Parts Breakdown

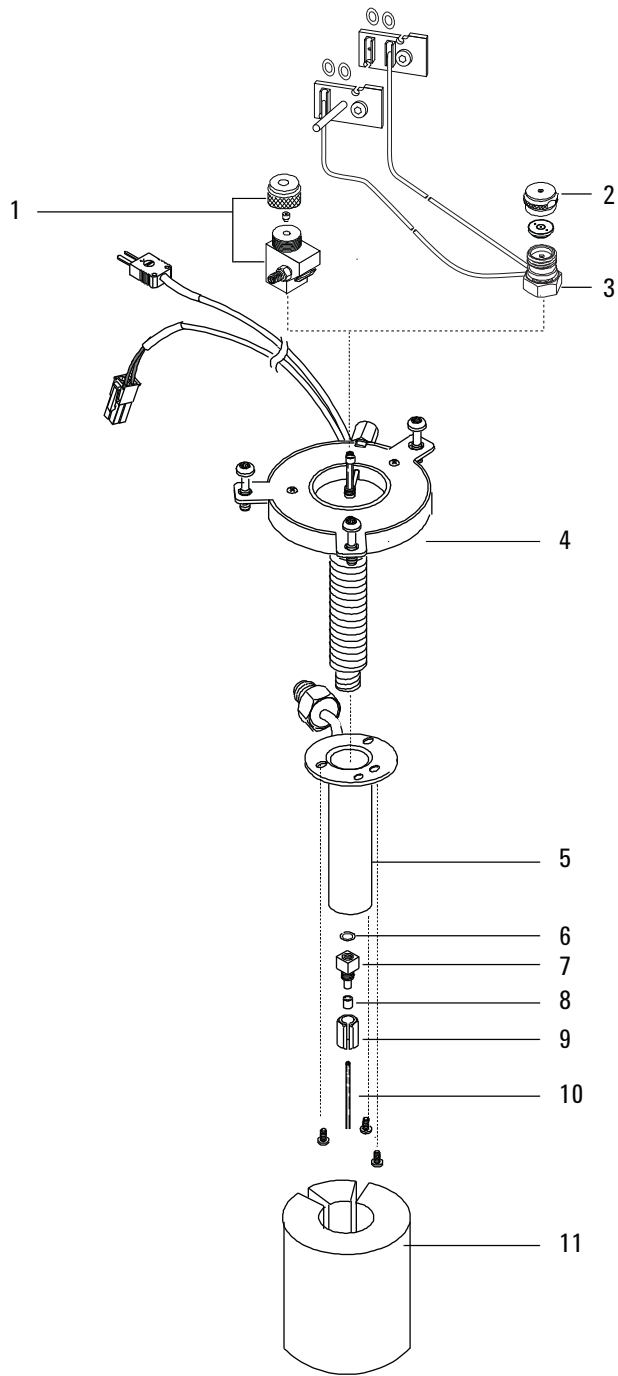
#### Programmed Temperature Vaporization Inlet (PTV)

#### PTV Inlet Body

Item	Description	Part number	Qty
1	Septumless head assembly	G2617-60507	1
2	Septum nut	18740-60835	1
3	Septum head	G3450-60088	1
4	PTV inlet assembly	G2617-60506	1
5	Cooling jacket		
	PTV, CO2 cooling jacket	G2617-60508	1
	PTV N2 cooling jacket	G2619-60501	1
NS	PTV inlet assembly with cooling jacket		
	PTV inlet with CO2 cooling jacket	G2617-60518	
	PTV inlet with LN2 cooling jacket	G2617-60517	
6	Silver seal (5/pk)	5182-9763	1
7	Graphpak inlet adapter (includes silver seal and ferrule)		1
8	Ferrules for graphpak inlet		1
9	Split nut for inlet adapters	5062-3525	1
10	PTV liner		1
11	PTV insulation block	G2617-20510	1
NS	PTV cryo insulator	G2617-60510	1
NS	PTV ferrule assembly tool	G2617-80540	–

\* See the Parts Finder and the Agilent chemical analysis consumables and accessories catalog for Merlin assemblies and other consumables, such as the Graphpak adapter and ferrules.

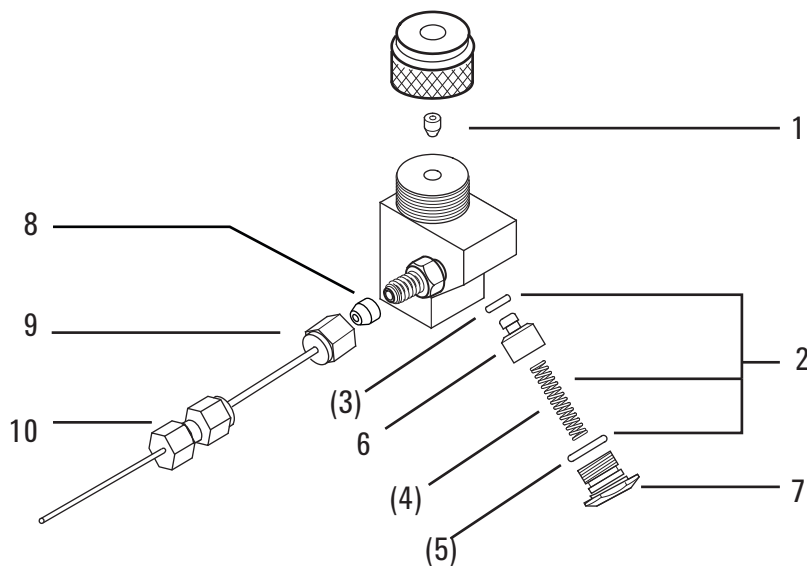
**3 Illustrated Parts Breakdown**  
Programmed Temperature Vaporization Inlet (PTV)



### 3 Illustrated Parts Breakdown Programmed Temperature Vaporization Inlet (PTV)

#### PTV Septumless head

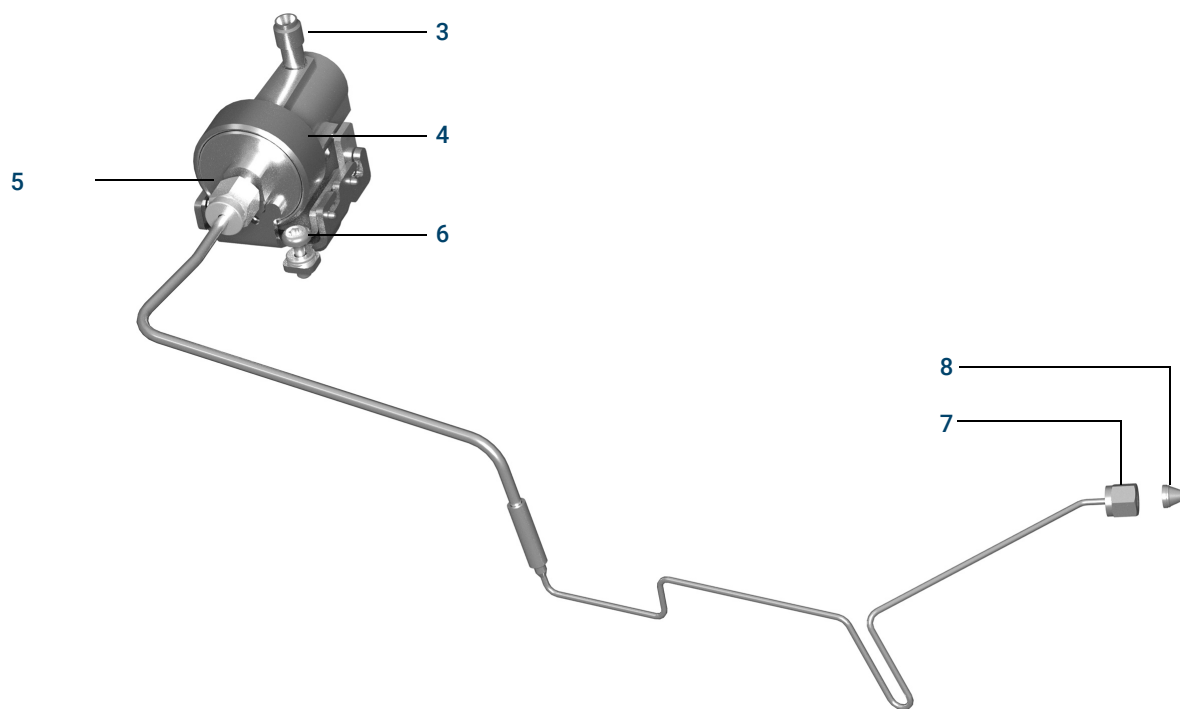
	Description	Part number	Qty
	Septumless head	G2617-60507	
1	PTFE ferrule (needle seal)	5182-9748	1
2	Service kit for SLH (Septumless head repair kit: includes Kalrez seal, spring, and Viton seal)	5182-9747	1
(3)	Kalrez seal (normally order item 2 instead)	5182-9759	1
(4)	Pressure spring (normally order item 2 instead)	5182-9758	1
(5)	Viton seal (normally order item 2 instead)	5182-9775	1
6	Valve body	5182-9757	1
7	Sealing element	5182-9760	1
8	Ferrule, 1/16-inch PTFE, for septumless head carrier gas tube	0100-1375	1
9	PTV column adapter tube (includes 1/6-inch nut)	G2617-80550	1
10	PTV septumless head weldment (includes jumper tube to septum purge channel)	G3450-60090	1



### 3 Illustrated Parts Breakdown Programmed Temperature Vaporization Inlet (PTV)

#### PTV Split vent

	Description	Part number	Qty
1	8890 PTV Split Vent Trap Assembly	G3450-60096	1
2	8890 SVT Inlet Port	G3450-21072	1
3	8890 PTV Split Vent Tube Assembly	G3450-60087	1
NS	Replacement filter kit	G1544-80530	1
4	Trap nut	G1544-20650	1
5	Vent tube weldment	G3450-60094	
7	Nut, 1/16-inch SS	0100-0053	1
8	Ferrule, 1/16-inch SS	0100-1490	1
NS	Split Vent Trap PM Kit, Single Cartridge, 2 O-rings	5188-6495	1
NS	Screw, M4 × 12 mm, T-20 (for trap retainer)	0515-2496	1
NS	Trap retainer	G3452-00005	1



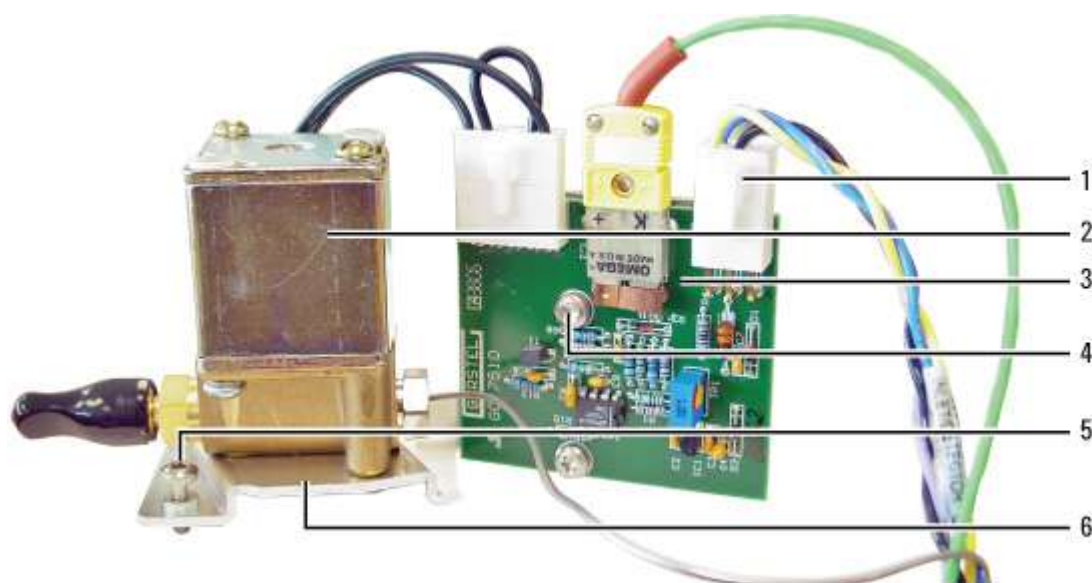


### 3 Illustrated Parts Breakdown Programmed Temperature Vaporization Inlet (PTV)

#### PTV Temperature controller

Item	Description	Part number	Qty
	Inlet TC Interface PCA	G3450-61870	
	Inlet TC PCA Bracket	G3450-00802	1
1	Cable, thermocouple	G2617-60505	1
4	Screw, M4 × 12 mm long, T-20 (attach board to bracket)*	0515-2496	2
5	Screw, M4 × 12 mm long, T-20 (attach bracket to carrier)	0515-2496	2
6	Bracket, PTV thermocouple board and LCO2 valve	G3430-00058	1

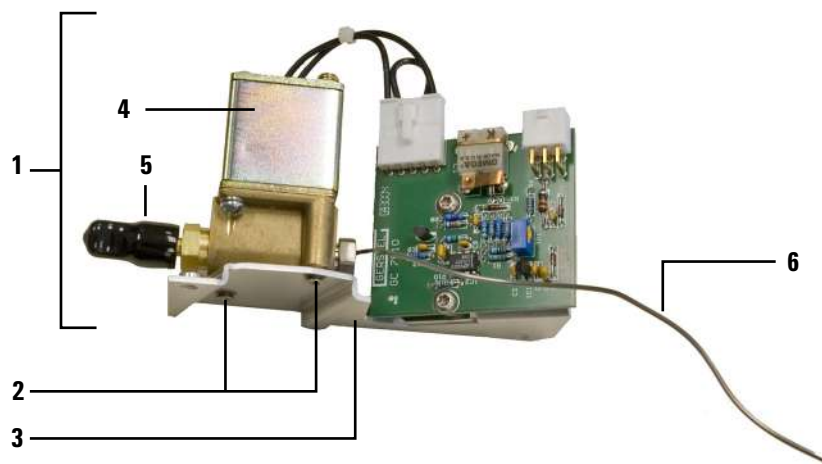
\* Some assemblies use Screw, M4 × 6 mm long, T-20 (attach board to bracket), p/n 0515-2832.



### 3 Illustrated Parts Breakdown Programmed Temperature Vaporization Inlet (PTV)

#### PTV CO<sub>2</sub> cryo assembly

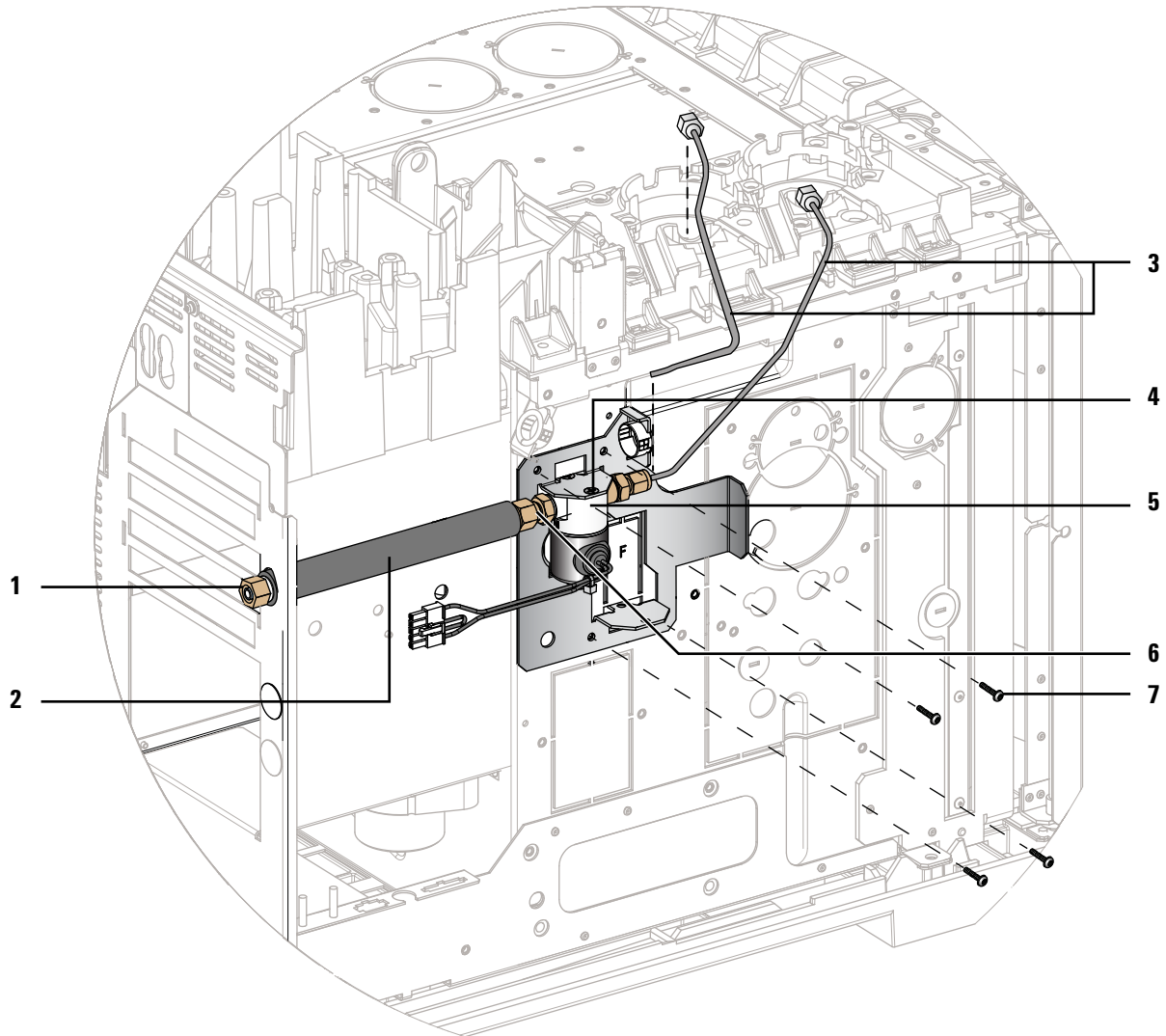
Item	Description	Part number	Qty
	Inlet TC Interface PCA	G3450-61870	
	Inlet TC PCA Bracket	G3450-00802	
1	PTV LCO2 Cyro Assembly (recommended repair level)	G2630-60525	1
2	Screw, #8-32 x .375 inch long (to attach valve to bracket)	2510-0102	2
5	Cap, protective without flange	1401-0044	1
6	PTV CO <sub>2</sub> brazement (valve to IP tube)	G2617-80510	1
NS	1/8-inch male connector without O-ring	G1543-80025	1
NS	Gland seal CO <sub>2</sub>	G1565-20590	1
NS	PTFE seal	G1565-20840	1



**3 Illustrated Parts Breakdown**  
 Programmed Temperature Vaporization Inlet (PTV)

**PTV LN<sub>2</sub> cryo assembly**

Item	Description	Part number	Qty
4	Screw, 8-32 x .312-inch pan head, pozi (included in 5)	2510-0043	2
5	8890 PTV LN <sub>2</sub> Cryo Assembly (Recommended valve repair level.)	G3450-60089	1
	8890 PTV LN <sub>2</sub> Cryo Supply Tub	G3450-60091	



### 3 Illustrated Parts Breakdown

#### Programmed Temperature Vaporization Inlet (PTV)

#### Consumables and Parts for the PTV Inlet

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

#### PTV liners and ferrules

Description	Part number
Single baffle, 2-mm id, 180- $\mu$ L, deactivated, glass wool	5183-2038
Single baffle, 2-mm id, 200- $\mu$ L, deactivated	5183-2036
Multi-baffle, 1.5-mm id, 150- $\mu$ L, deactivated	5183-2037
Fritted glass, 1.5-mm id, 150- $\mu$ L, deactivated	5183-2041
Graphpak 3D ferrules for liner (5/pk)	5182-9749
Installation tool for 3D ferrules	G2617-80540

#### Other consumables and parts for the PTV inlet

Description	Part number
Syringe, 5- $\mu$ L, 23-gauge fixed-needle	9301-0892
Syringe, 10- $\mu$ L, 23-gauge fixed-needle	9301-0713
Syringe, 50- $\mu$ L, 23-gauge fixed-needle, for large volume injections	5183-0318
Syringe, 100- $\mu$ L, 23-gauge fixed-needle, for large volume injections	5183-2058
Split Vent Trap PM Kit, Single Cartridge, 2 O-rings	5188-6495

#### Septumless head

Description	Part number
Septumless head	G2617-60507
PTFE ferrules (needle seal) (10/pk)	5182-9748
Septumless head rebuild kit (includes Viton seal, Kalrez seal, and pressure spring)	5182-9747
Carrier gas tube for septumless head	G2617-80550
Ferrule, 1/16-inch PTFE, for septumless head carrier gas tube	0100-1375

#### Septum head

Description	Part number
Merlin Microseal septum (high-pressure)	5182-3444
11-mm septa, red (50/pk)	5181-1263

### 3 Illustrated Parts Breakdown

#### Programmed Temperature Vaporization Inlet (PTV)

##### Septum head

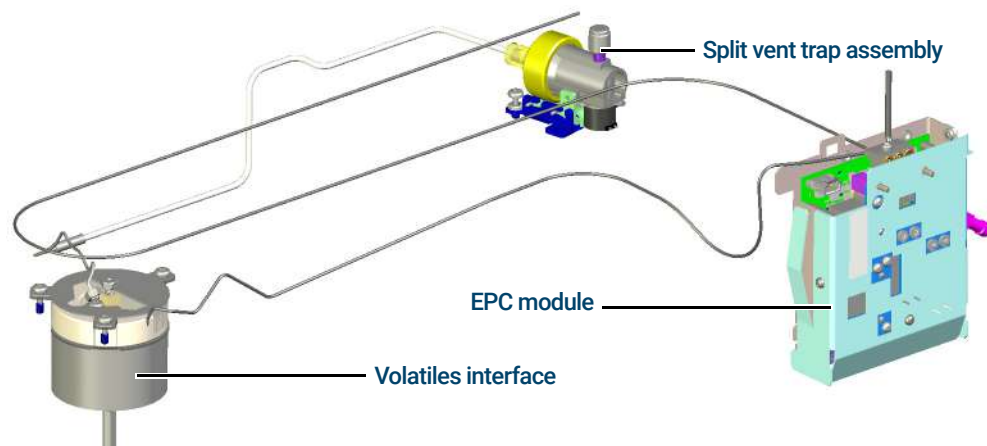
Description	Part number
Silver seal (5/pk)	5182-9763
Graphpak 2M inlet adapter, 0.20-mm id	5182-9754
Graphpak 2M inlet adapter, 0.25- to 0.33-mm id	5182-9761
Graphpak 2M inlet adapter, 0.53-mm id	5182-9762
Ferrules for Graphpak 2M inlet, 0.20-mm id (10/pk)	5182-9756
Ferrules for Graphpak 2M inlet, 0.25-mm id (10/pk)	5182-9768
Ferrules for Graphpak 2M inlet, 0.32-mm id (10/pk)	5182-9769
Ferrules for Graphpak 2M inlet, 0.53-mm id (10/pk)	5182-9770
3-D Graphpak ferrules (5/pk)	5182-9749
Split nut for Graphpak adapter	5062-3525
Includes (1) adapter, (1) silver seal, and (1) split column nut.	

### 3 Illustrated Parts Breakdown Volatiles Interface (VI)

## Volatiles Interface (VI)

Top level subassemblies for VI inlet accessories:

- G3450A 100 psi Volatiles Interface with EPC, Kit

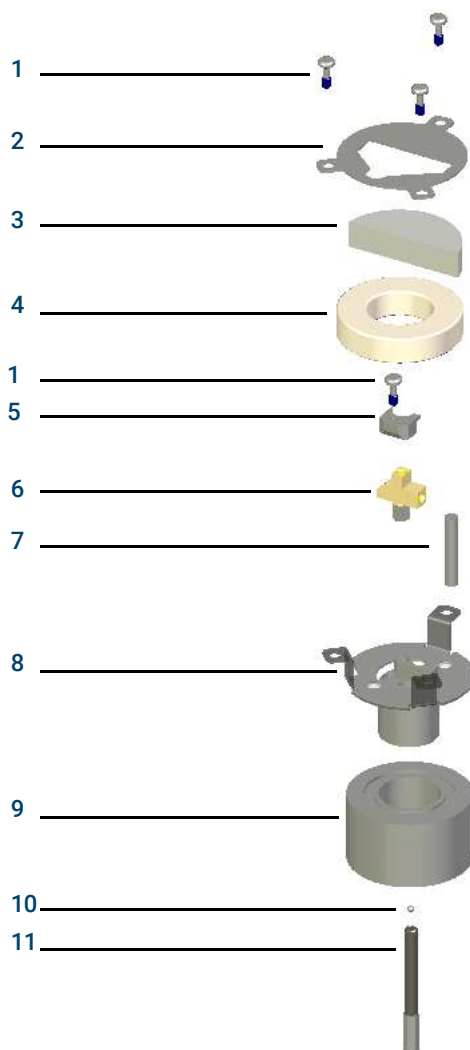


Description	Part no.
VI EPC module, 100 PSI	G3450-67407

### 3 Illustrated Parts Breakdown Volatiles Interface (VI)

#### Volatiles Interface (VI)

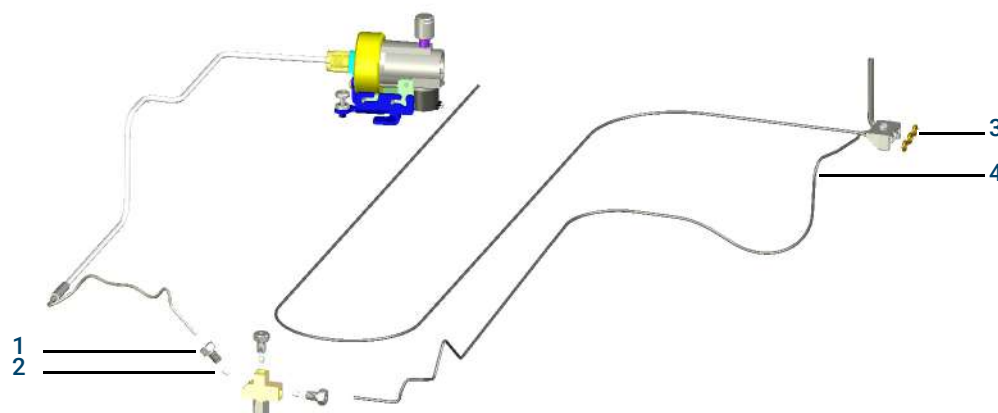
Item	Description	Part number	Qty
1	Screw, captive, M4 x 12 mm	1390-1023	4
2	VI top cover	G2319-00020	1
3	Top insulation	G2319-20580	1
4	Upper tee insulation	G2319-20590	1
5	Clamping plate	G2319-20540	1
6	Volatiles interface inlet body, deactivated	G2319-60505	1
7	VI heater/sensor assembly	G2319-60503	1
8	Heater block assembly (include parts 2, 3, 4 (qty 3), and 6)	G2319-60507	1
9	VI insulation, heater block	G2319-20530	1
10	Vespel graphite ball (for shipping)	G1544-20735	1
11	Column nut, extended	G3504-20504	1



### 3 Illustrated Parts Breakdown Volatiles Interface (VI)

#### Volatiles interface partner fitting assembly

Item	Description	Part number	Qty
1	Nut, 1/16-inch	19258-20830	3
2	Siltite ferrule, 1/16 in id	G2855-20553	3
3	O-ring	0905-1493	3
4	Partner fitting assembly	G3450-67584	1

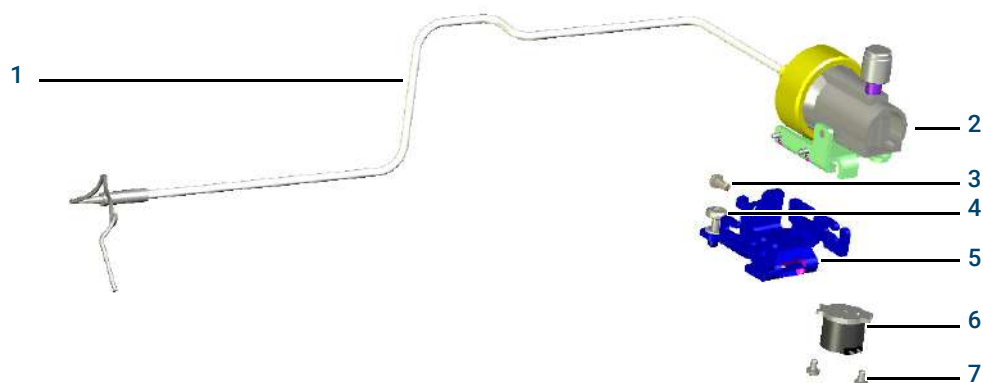




### 3 Illustrated Parts Breakdown Volatiles Interface (VI)

#### Volatiles interface split vent trap

Item	Description	Part number	Qty
1	VI split tube assembly	G3450-67815	1
	Split vent trap assembly (includes items 2, 3, 4, 6, and 7)	G3450-60832	
2	Trap assembly	G4585-60124	1
3	Screw, M3 × 6 mm, SST-300, PSVT	0515-0680	1
4	Screw, captive, M4 × 12 mm	1390-1023	1
5	SVT base	G3450-00520	1



### Consumables and Parts for the VI

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- the Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- the Agilent catalog for consumables and supplies

### Nuts, ferrules, and hardware for capillary columns

Column id	Description	Typical use	Part number
.530 mm	Ferrule, Vespel/graphite, 0.8-mm id (10/pk)	0.45-mm and 0.53-mm capillary columns	5062-3512
	Ferrule, graphite, 1.0-mm id (10/pk)	0.53-mm capillary columns	5080-8773
	Column nut, finger-tight (for 0.53-mm columns)	Connect column to inlet or detector	5020-8293
.320 mm	Ferrule, Vespel/graphite, 0.5-mm id (10/pk)	0.32-mm capillary columns	5062-3514
	Ferrule, graphite, 0.5-mm id (10/pk)	0.1-mm, 0.2-mm, 0.25-mm, and 0.32-mm capillary columns	5080-8853
	Column nut, finger-tight (for .100- to .320-mm columns)	Connect column to inlet or detector	5020-8292
.250 mm	Ferrule, Vespel/graphite, 0.4-mm id (10/pk)	0.1-mm, 0.2-mm, and 0.25-mm capillary columns	5181-3323
	Ferrule, graphite, 0.5-mm id (10/pk)	0.1-mm, 0.2-mm, 0.25-mm, and 0.32-mm capillary columns	5080-8853
	Column nut, finger-tight (for .100- to .320-mm columns)	Connect column to inlet or detector	5020-8292
.100 and .200 mm	Ferrule, Vespel/graphite, 0.37-mm id (10/pk)	0.1-mm and 0.2-mm capillary columns	5062-3516
	Ferrule, Vespel/graphite, 0.4-mm id (10/pk)	0.1-mm, 0.2-mm, and 0.25-mm capillary columns	5181-3323
	Ferrule, graphite, 0.5-mm id (10/pk)	0.1-mm, 0.2-mm, 0.25-mm, and 0.32-mm capillary columns	5080-8853
	Column nut, finger-tight (for .100- to .320-mm columns)	Connect column to inlet or detector	5020-8292
All	Ferrule, no-hole (10/pk)	Testing	5181-3308
	Capillary column blanking nut	Testing-use with any ferrule	5020-8294
	Column nut, universal (2/pk)	Connect column to inlet or detector	5181-8830
	Column cutter, ceramic wafer (4/pk)	Cutting capillary columns	5181-8836

## Detectors

This section contains an illustrated parts breakdown for each of the following detectors and related components.

- Packed Column Adapters 86
- Electron Capture Detector (ECD) 87
- Flame Ionization Detector (FID) 93
- Flame Photometric Detector+ (FPD+) 99
- Nitrogen Phosphorus Detector (NPD) 113
- Thermal Conductivity Detector (TCD) 120

Certain components are common to all detectors.

## Packed Column Adapters

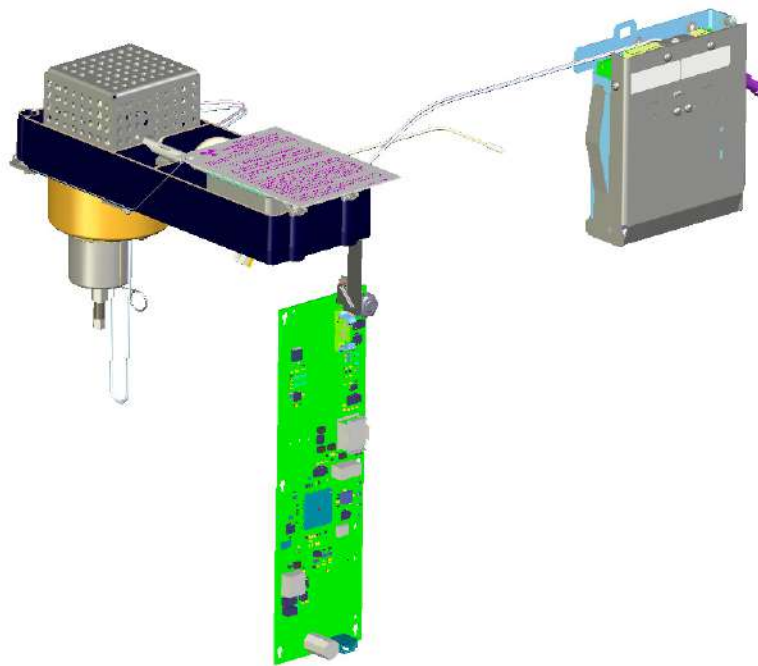
The detectors all accept the packed column adapters listed below.

Description	Part number
Pre-swaged 1/8" Packed Column Adapter	G3450-60191
Pre-swaged Inert 1/8" Packed Column Adapter	G3450-60192
Pre-swaged 1/4" Packed Column Adapter	G3450-60193
Pre-swaged Inert 1/4" Packed Column Adapter	G3450-60194

## Electron Capture Detector (ECD)

G3562A (G3563A - Japan) ECD Detector Accessory with EPC

G3564A (G3573A - Japan) Aux ECD Detector Accessory with EPC (Side Mount)



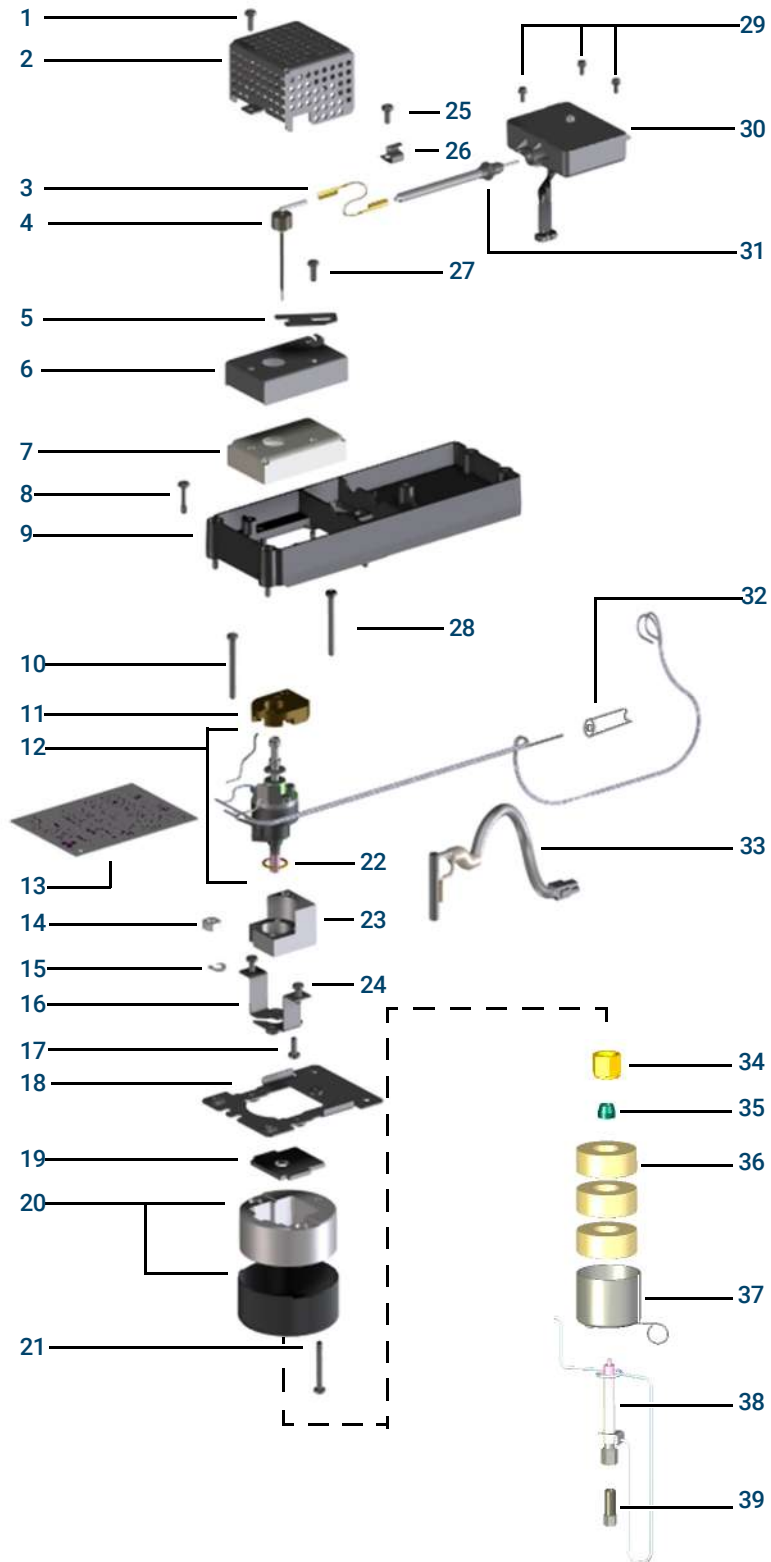
### ECD detector module

Item	Description	Part number	Qty
1	Screw, pan head, M4 × 12 mm	0515-2711	1
2	ECD anode cover	G2397-00011	1
3	ECD anode signal wire assembly	19233-60635	1
4	Anode/Ferrule/Nut assembly (specific license required)	-	1
5	Clip shim	G4593-00007	1
6	ECD thermal cover	G1533-00030	1
7	ECD top insulation	G1533-00020	1
8	Screw, Torx head, captive, M4 × 20 mm	1390-1024	4
9	Detector pallet	G4591-40025	1
10	Screw, machine, M4 × 45 mm	0515-2484	1
11	ECD upper heater block		1
12	ECD cell (includes purge, makeup gas, and vent tubing)	See <b>ECD replacement cell</b> on page 90.	1
13	ECD nameplate	-	1
NS	Wire rope loop for ECD nameplate	-	1
14	ECD flow guide		1
15	ECD spring washer		1

### 3 Illustrated Parts Breakdown Electron Capture Detector (ECD)

Item	Description	Part number	Qty
16	ECD mounting strap	G4593-00001	1
17	Screw, pan head, M4 x 12 mm	0515-2711	1
18	ECD mounting plate	G3433-00003	1
19	ECD seal insulator	G4593-00006	1
20	ECD insulation cup assembly	G4593-60002	1
21	Screw, pan head, Torx T-20, M4 x 35 mm SST PSVT	0515-2559	1
22	O-ring, 0.688 in. OD x 0.062 in. ID, AG plated, 321SS	0905-0464	1
23	ECD lower heater block	G3450-20004	1
24	Screw, pan head, M4 x 12 mm	0515-2711	2
25	Screw, pan head, Torx T-20, M4 x 10 mm SST PSVT	0515-2495	1
26	Interconnect clamp	19231-00040	1
27	Screw, pan head, M4 x 12 mm	0515-2711	1
28	Screw, machine, M4 x 45 mm	0515-2484	1
29	Screw, pan head, Torx T-10, M3 x 8 mm SST PSVT	0515-0372	3
30	ECD electrometer assembly without interconnect	G3450-61883	1
31	ECD interconnect assembly	G4593-81000	1
32	Tubing, Tygon, 30 in	0890-0934	1
33	Heater/sensor assembly	G1533-60625	1
34	Nut, hex, 1/4 in, brass	0100-0056	1
35	Ferrule, 10/pk	5080-8774	1
36	Nut warmer insulation	19234-60715	3
37	Nut warmer cup assembly	19234-60700	1
38	ECD make up gas adapter, bent tube	G3450-63530	1
39	Column nut (capillary, universal, 2/pk)	5181-8830	1

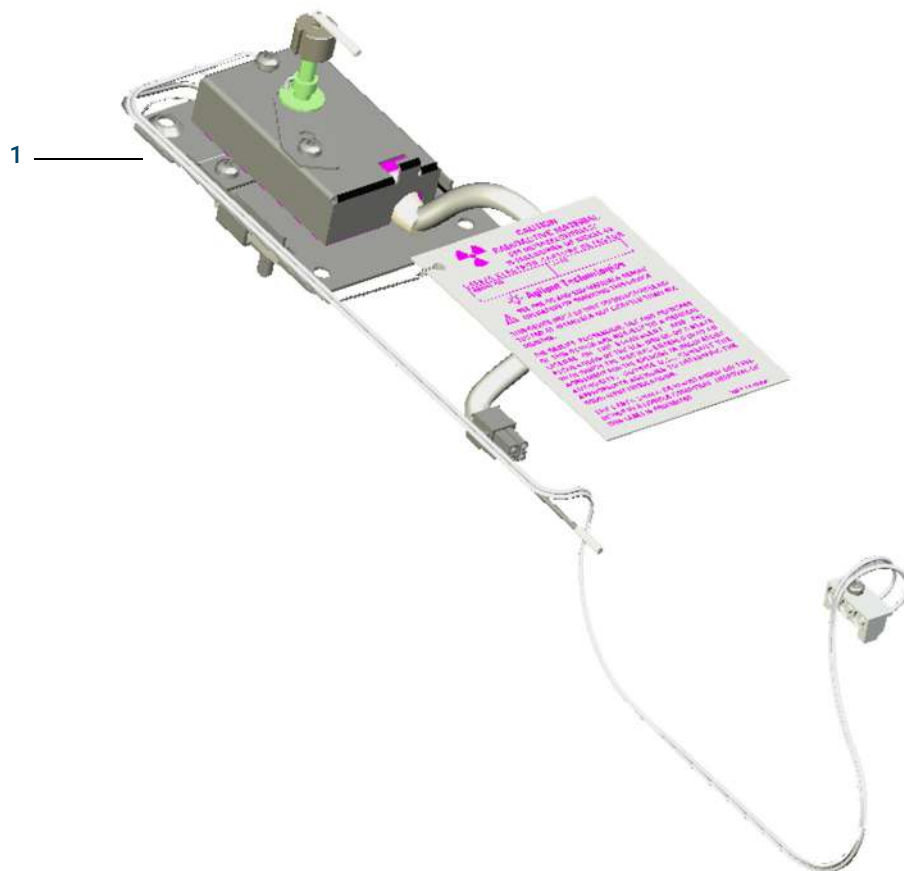
3 Illustrated Parts Breakdown  
Electron Capture Detector (ECD)



### 3 Illustrated Parts Breakdown Electron Capture Detector (ECD)

#### ECD replacement cell

Item	Description	Part number	Qty
1	Replacement ECD Cell (China Only)	G3450-60610	1
	Replacement ECD Cell	G3450-60611	
	Replacement ECD Cell (Japan General)	G3450-60612	
	Replacement ECD Cell (Japan Specific)	G3450-60613	

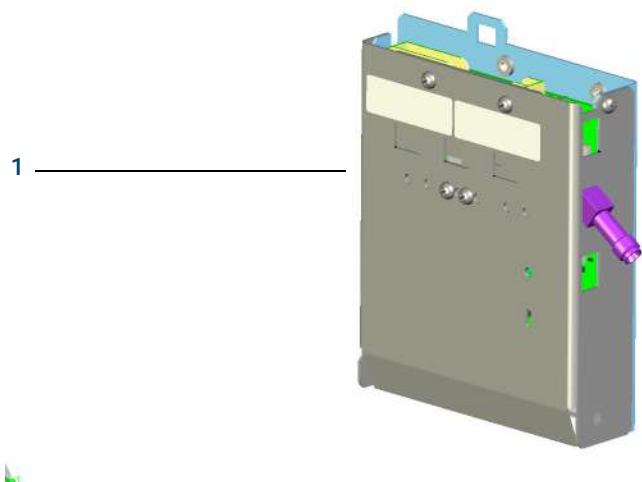




### 3 Illustrated Parts Breakdown Electron Capture Detector (ECD)

#### ECD detector EPC module

Item	Description	Part number	Qty
1	ECD EPC module	G3450-67452	1



#### ECD auxiliary pneumatics jumper

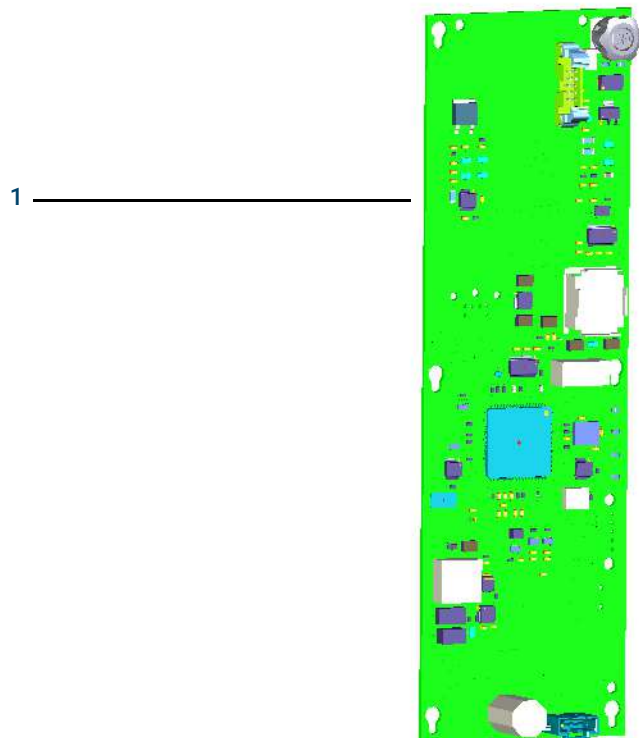
Item	Description	Part number	Qty
1	ECD auxiliary pneumatics jumper (connects side mount ECD to EPC module)	G3450-60041	1



### 3 Illustrated Parts Breakdown Electron Capture Detector (ECD)

#### ECD detector interface PCA

Item	Description	Part number	Qty
1	PCA, ECD interface board PCA	G4593-61820	1



#### Consumables for the ECD

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- Agilent catalog for consumables and supplies

#### ECD consumables and parts

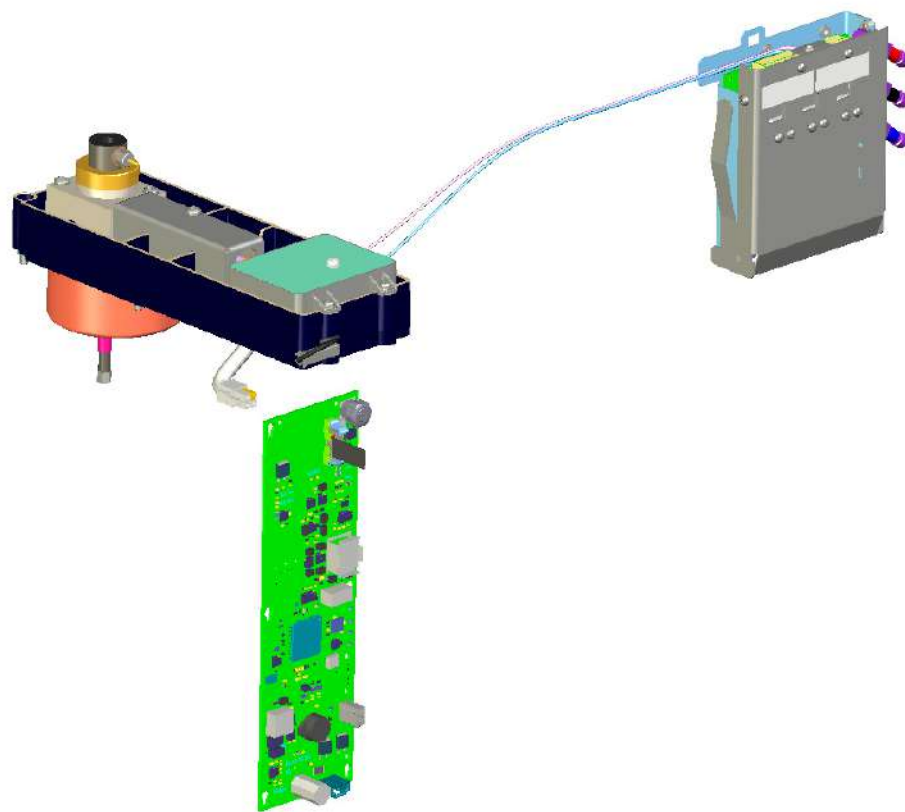
Description	Part number
ECD wipe test kit	18713-60050

3 **Illustrated Parts Breakdown**  
Flame Ionization Detector (FID)

## Flame Ionization Detector (FID)

G3532A FID Detector Accessory with EPC

G63533A Aux FID Detector Accessory with EPC (Side Mount)

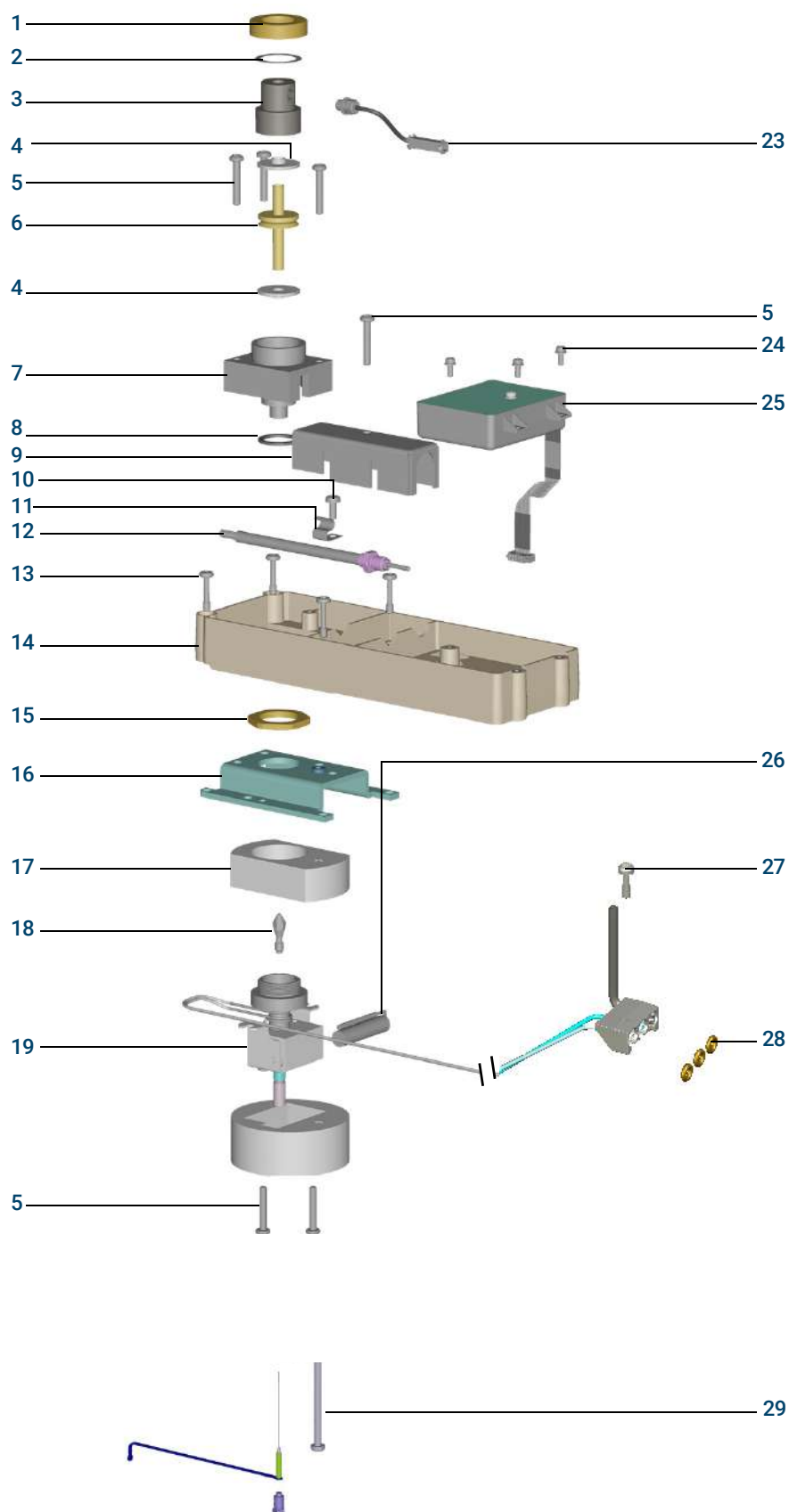


### 3 Illustrated Parts Breakdown Flame Ionization Detector (FID)

#### FID detector module

Item	Description	Part number	Qty
1	FID collector nut	19231-20940	1
2	FID wave washer	3050-1246	1
3	FID igniter castle	19231-20910	1
4	FID collector insulator	G1531-20700	2
5	Screw, M4x0.7 x 25 mm, Torx T-20, SST PSVT	0515-2712	6
6	FID collector body	G1531-20690	1
7	Collector body	G4591-20690	1
8	FID collector gasket, 12/pk	5180-4165	1
9	Detector interconnect cover	G4591-00220	1
10	Screw, M4 x 10 mm, Torx T-20 SST PSVT	0515-2495	1
11	Interconnect clamp	19231-00040	1
12	FID interconnect assembly	G4591-60815	1
13	Captive screw, detector pallet, M4 x 20 mm	1390-1024	4
14	Detector pallet	G4591-40025	1
15	FID spanner nut	19231-20990	1
16	FID thermal strap	G1531-00105	1
17	FID insulation strap fill	G4591-00235	1
18	FID jet 0.11 in ID	G4591-20320	1
19	FID base brazement (includes FID jet, part 18)	G3450-67710	1
23	FID glow plug	19231-60680	1
NS	Ignitor cable	G3431-60680	1
24	Screw, machine, with crest-cup-cone washer, M3 x 8 mm SST PSVT	0515-0372	3
25	FID electrometer	G3450-61881	1
26	Heater sensor assembly (cabling not shown)	G1530-67950	1
27	Partner screw	G4585-20086	1
28	O-ring, 12/pk	5180-4181	3
29	Screw, machine, M4 x 50 mm, Torx T-20 SST PSVT	0515-1620	1

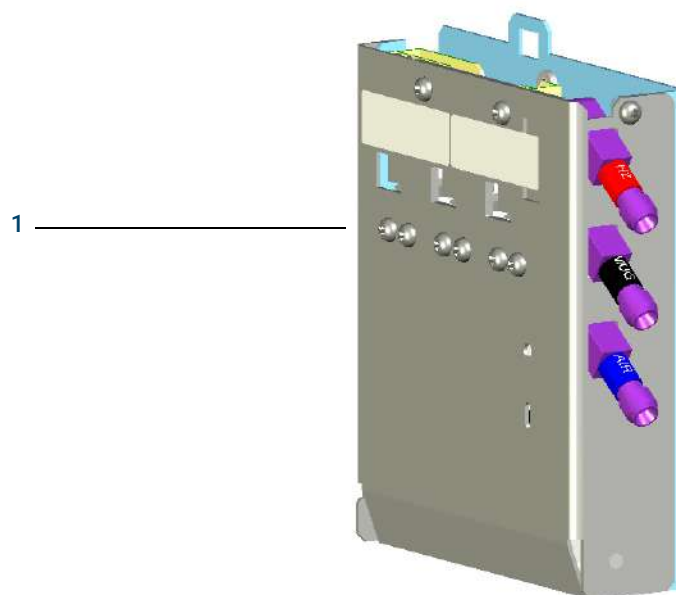
### 3 Illustrated Parts Breakdown Flame Ionization Detector (FID)



### 3 Illustrated Parts Breakdown Flame Ionization Detector (FID)

#### FID detector EPC module

Item	Description	Part number	Qty
1	FID EPC module	G3450-67450	1

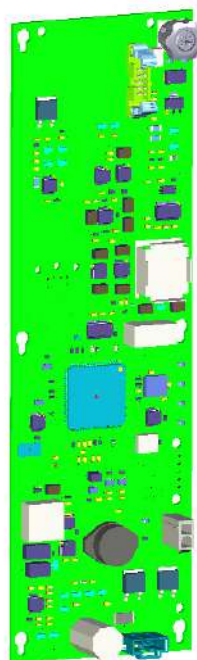


### 3 Illustrated Parts Breakdown Flame Ionization Detector (FID)

#### FID detector interface PCA

Item	Description	Part number	Qty
1	PCA, FID interface board	G4591-61820	1

1



### 3 Illustrated Parts Breakdown Flame Ionization Detector (FID)

#### FID auxiliary pneumatics jumper

Item	Description	Part number	Qty
1	FID auxiliary pneumatics jumper (connects side mount FID to EPC module)	G3450-60041	1
2	Partner Screw	G4585-20086	1
3	O-ring (12pk)	5180-4181	3



#### Consumables for the FID

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- Agilent catalog for consumables and supplies

#### FID PM kits

Description	Part no.
Maintenance kit, FID rebuilding	G1531-67001
Maintenance kit, FID cleaning	G1531-67000

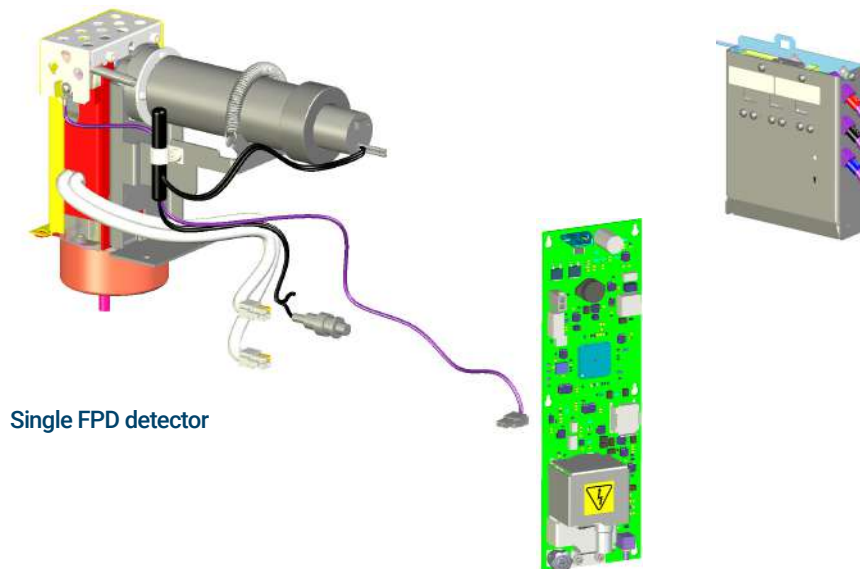


3 **Illustrated Parts Breakdown**  
Flame Photometric Detector+ (FPD+)

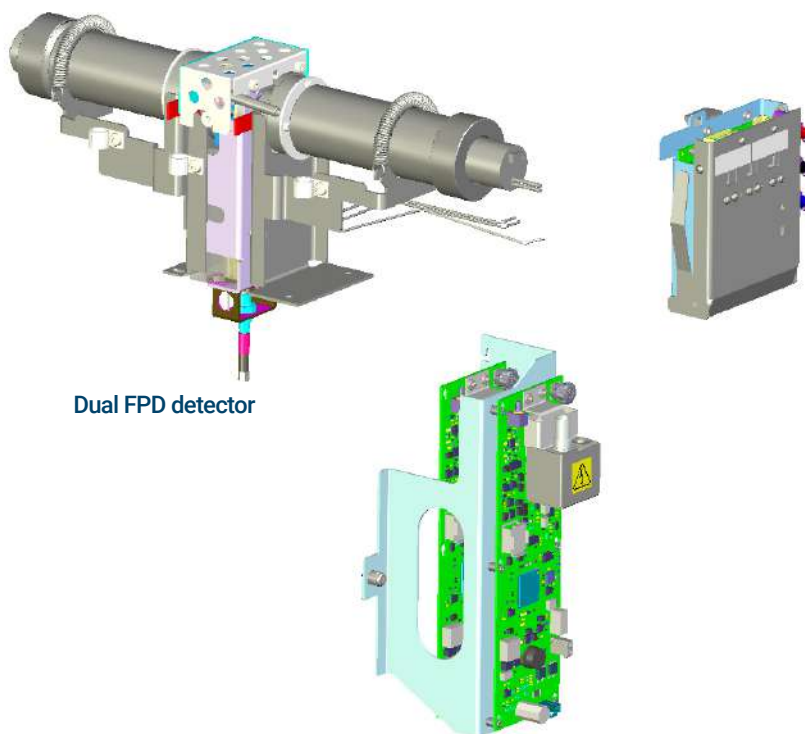
## Flame Photometric Detector+ (FPD+)

G3522A FPD Detector Accessory with EPC

G3523A Dual FPD Detector Accessory with EPC



Single FPD detector



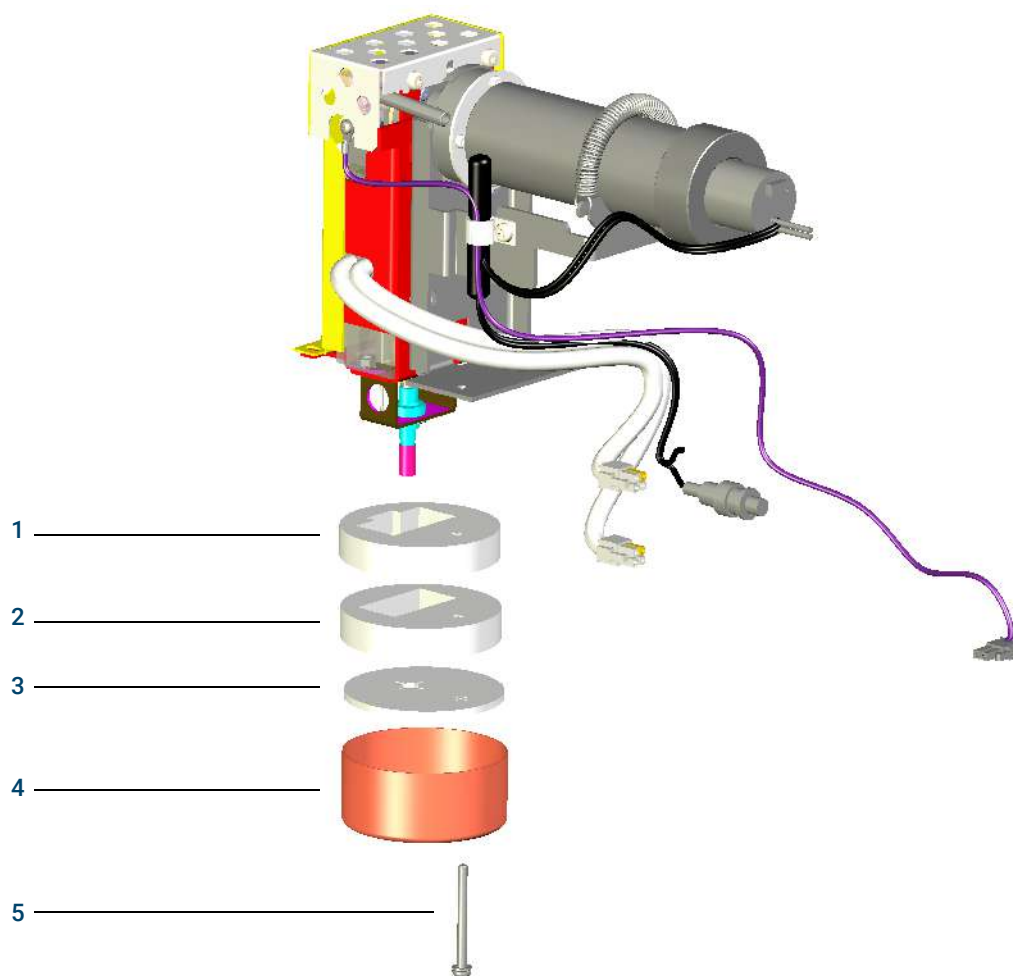
Dual FPD detector

### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD detector module

Parts are the same for FPD and Dual FPD detector modules.

Item	Description	Part number	Qty
	Insulation Cup Assembly (1-5)	G4595-60700	1
1	Insulation, top		
2	Insulation, middle		
3	Insulation, bottom		
4	Insulation cup		
5	Screw, M5x0.7 45mm-LG	0515-0670	1



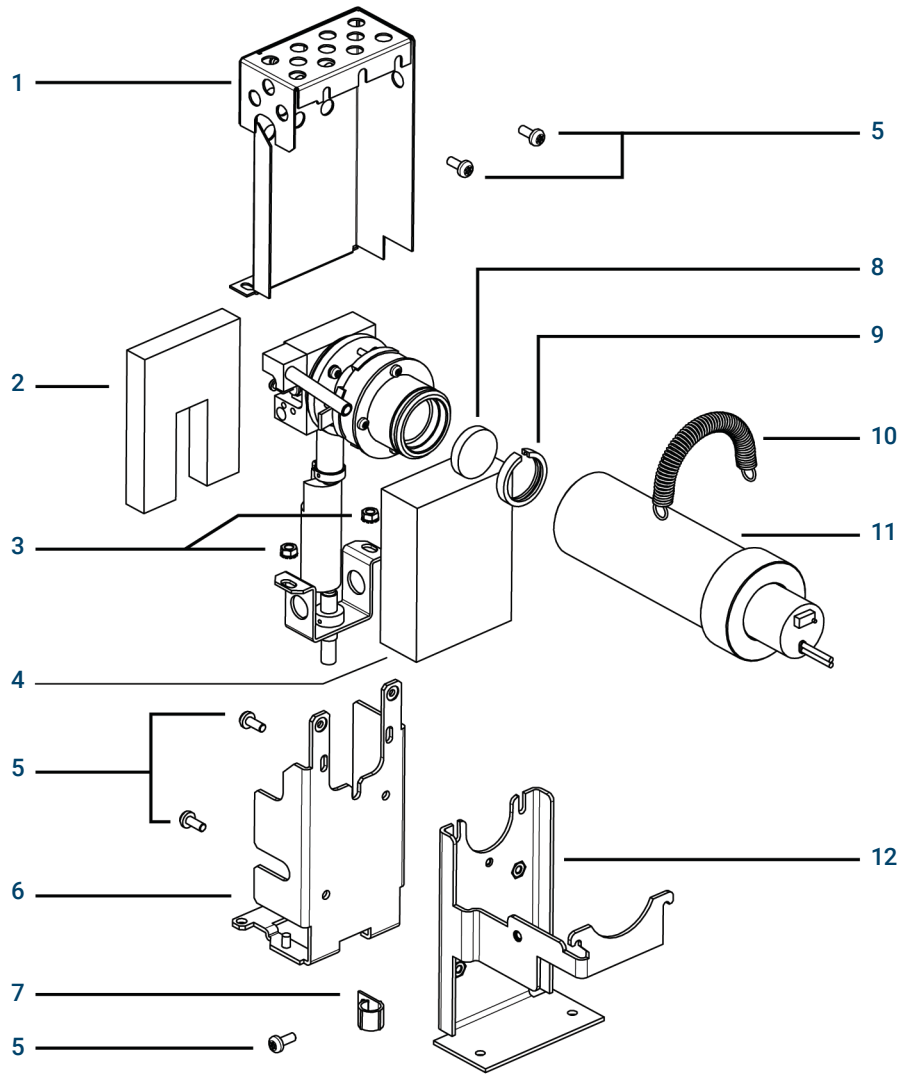
### 3 Illustrated Parts Breakdown

Flame Photometric Detector+ (FPD+)

#### FPD cover assembly, PMT assembly, filter, insulation, and brackets

Item	Description	Part number	Qty
1	FPD cover assembly	G4595-81330	1
2	Chimney insulation, middle	G3435-00342	1
3	Nut, hex, with lockwasher, M4	0535-0043	2
4	FPD insulation, hi temp	G3435-00340	1
5	Screw, machine, M4 × 10-mm long, SST PSVT	0515-2495	5
6	FPD Chimney back	G4595-00321	1
7	WHC-375 Wire Clip	1400-3196	1
8	FPD Sulphur filter 394nm	1000-1437	1
9	FPD filter spacer	19256-20910	1
10	FPD spring	1460-1160	1
11	PMT assembly	G3435-60360	1
12	FPD Main bracket	G4595-00370	1

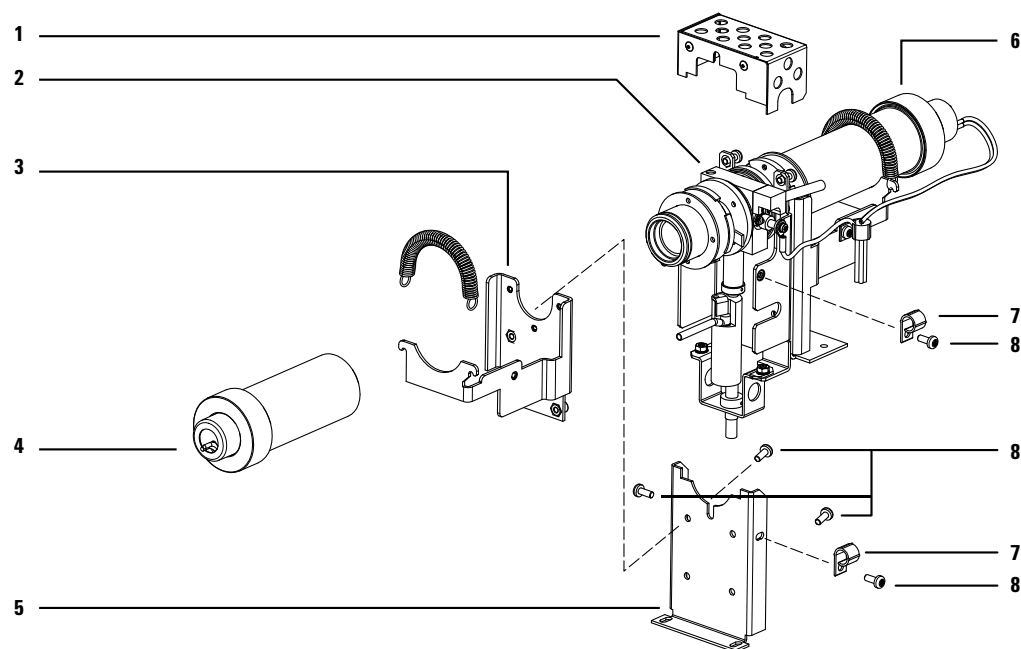
**3 Illustrated Parts Breakdown**  
Flame Photometric Detector+ (FPD+)



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### Dual FPD cover assembly, PMT assembly, filter, insulation, and brackets

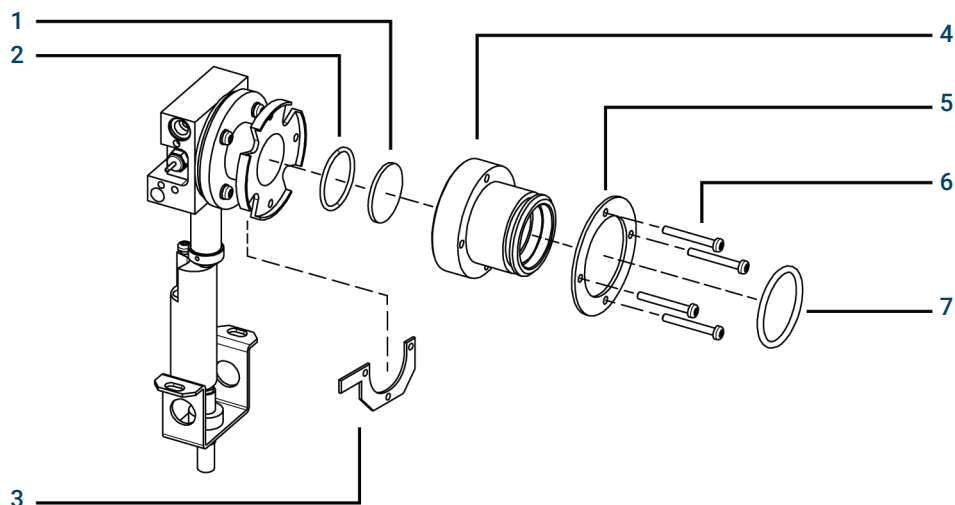
Item	Description	Part number	Qty
1	Dual FPD cover assembly	G3435-81360	1
2	FPD Cell brazement, dual - inert	G3450-67740	1
3	Dual wavelength main bracket	G3435-00375	1
4	PMT Assembly (Dual FPD+ only, left PMT, short)	G3435-60370	1
5	DW FPD Chimney front	G1535-00030	1
6	PMT Assembly (right PMT, long)	G3435-60360	1
7	WHC-375 Wire Clip	1400-3196	2
8	Screw, machine, M4 x 10-mm long	0515-2495	5



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD lens housing

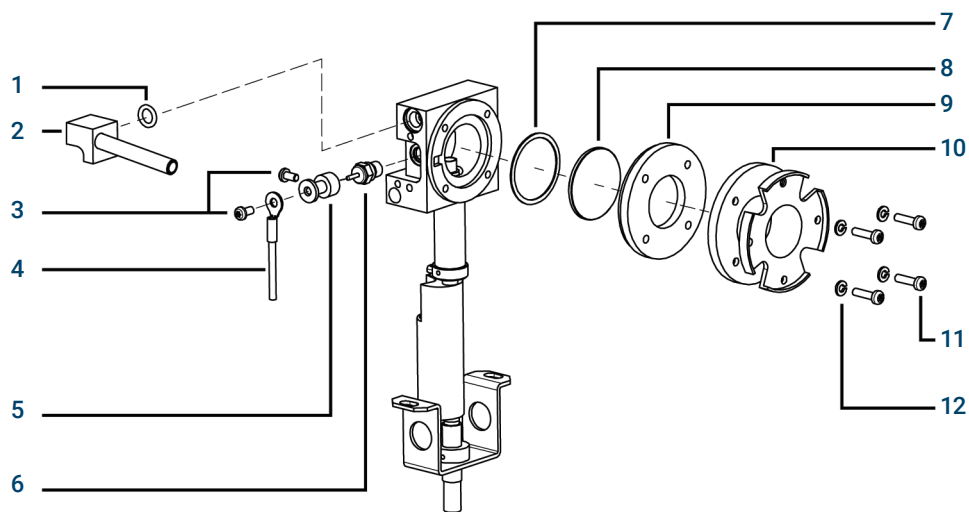
Item	Description	Part number	Qty
1	BK7 Convex glass lens, 31.2mm f.l.	1000-1438	
2	O-Ring 2-021 Silicone Rust Color	0905-0955	1
3	Clamp	19256-00090	1
4	Lens housing	G3435-20391	
5	Ring, flange	19256-00200	
6	Screw, 3.0 25 PN TX	0515-0683	4
7	O-Ring, Size 2-123, Silicone, Rust Color	0905-1159	1



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD lens housing with ignitor

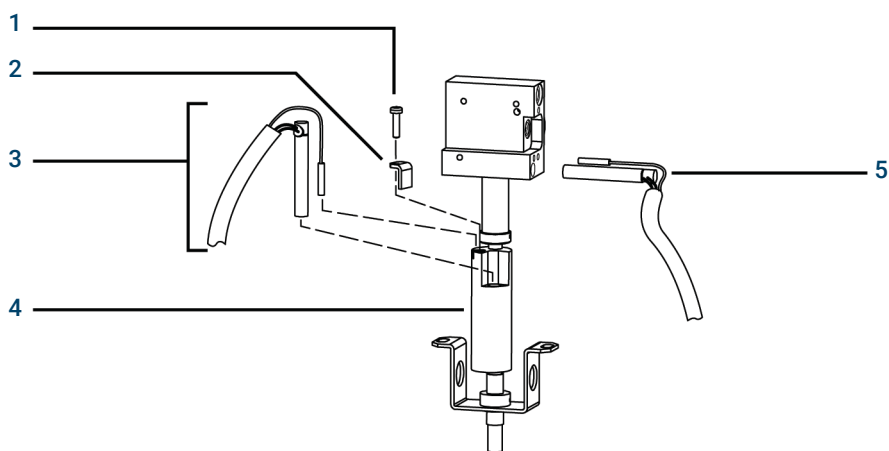
Item	Description	Part number	Qty
1	O-Ring, 2-010, Fluorocarbon, brown (exit tube)	0905-1014	1
2	Exit tube assembly	G3435-60330	1
3	Screw, M3 × 6 mm long, pan head	0515-0680	2
4	FPD Ignitor cable assembly	G3435-60600	1
5	Collet, glow plug	19256-20690	1
6	FPD glow plug (Ignitor), cleaned w/copper gasket (for FPD <sup>+</sup> , discard copper gasket)	19256-60750	1
	Ignitor replacement kit A. O-ring B. Spacer C. Glow plug	19256-60800	
7	Heat shield gasket, perfluoroelastomer	19256-80045	1
8	Window, first	19256-80030	1
9	Shield, heat	19256-20580	1
10	Lens housing coupling	G3435-20345	1
11	Screw, machine, M3 × 12 mm long, pan head	0515-1084	4
12	Washer, lock, HLCL 3.0 3.1 MM-ID 6.2 MM-OD	2190-0584	4



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD cell brazement/heater block

Item	Description	Part number	Qty
1	WS2 Coated M3 x 12 Screw	G3435-20357	1
2	Retaining Clip, FPD Heater-Sensor	19256-00340	1
3	FPD upper heater/sensor assembly	G1535-60610	1
4	FPD cell brazement inert 9000 GC	G3450-60552	1
5	FPD emission block heater assembly	G3435-60610	1

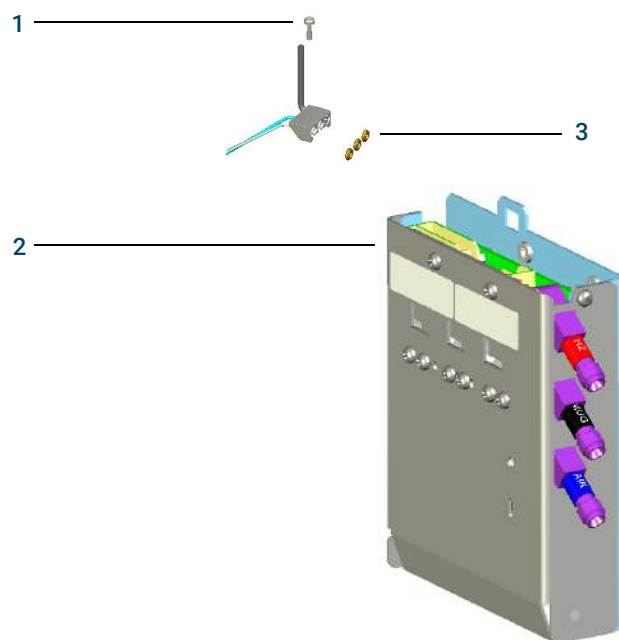




### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD detector EPC module, partner screw and o-rings

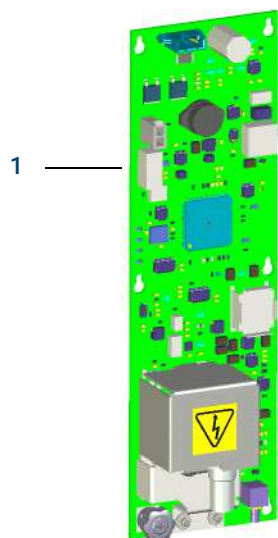
Item	Description	Part number	Qty
1	Partner screw	G4585-20086	1
2	FPD EPC module	G3450-67453	1
3	O-ring, 12/pk	5180-4181	3



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### FPD detector interface PCA

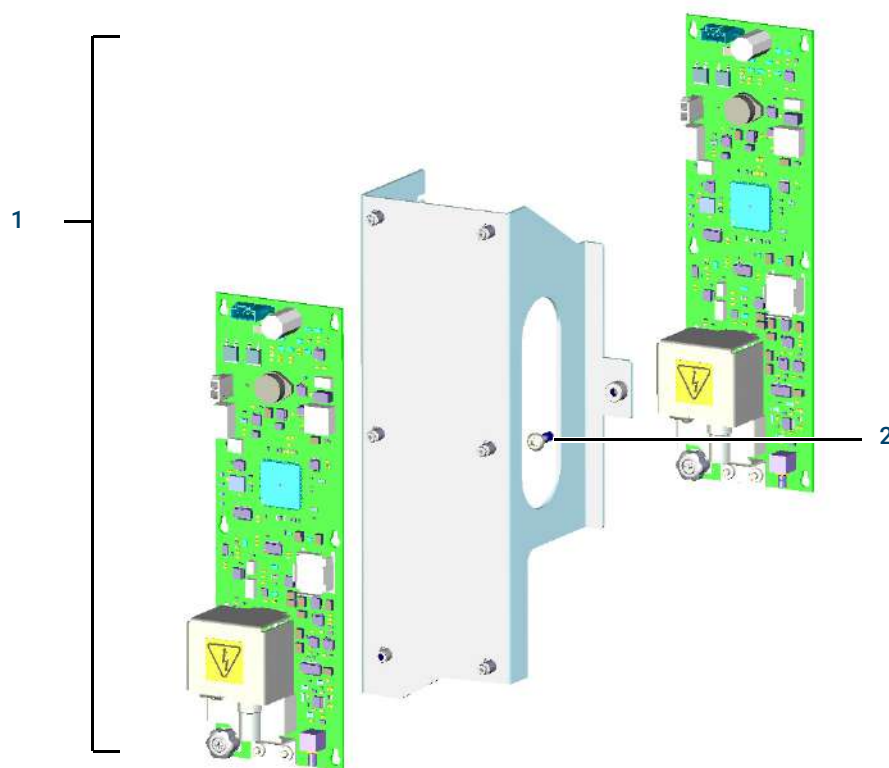
Item	Description	Part number	Qty
1	FPD detector interface PCA	G4595-61810	1



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### Dual FPD detector interface PCAs

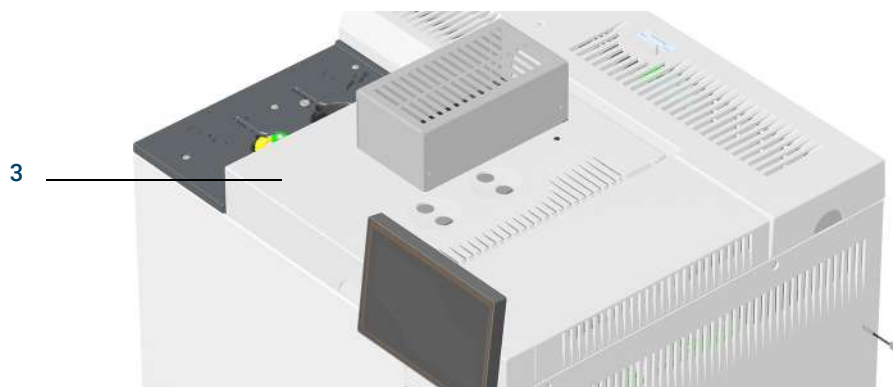
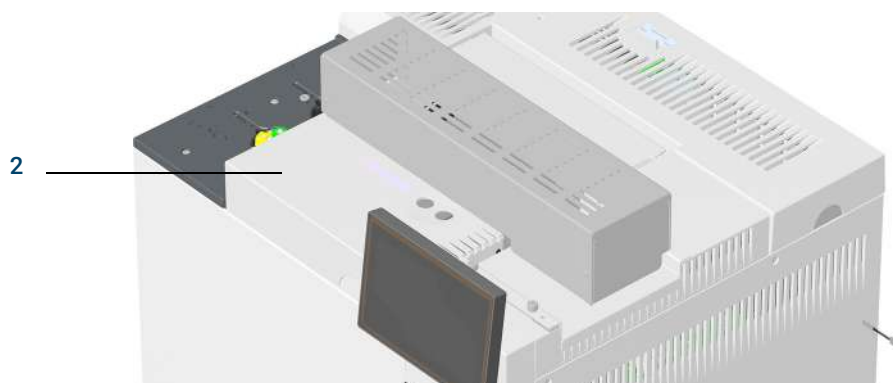
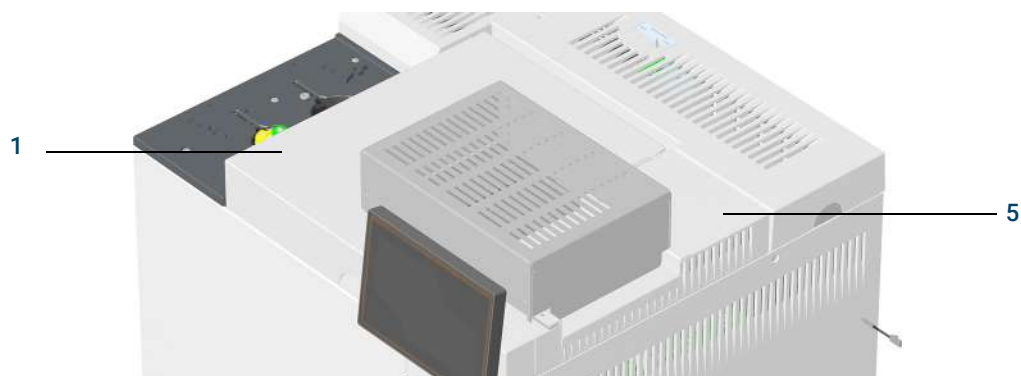
Item	Description	Part number	Qty
2	PCA mount assembly (includes part 4)	G3450-60023	1
4	Screw, captive M4 x 12 mm	1390-1023	1



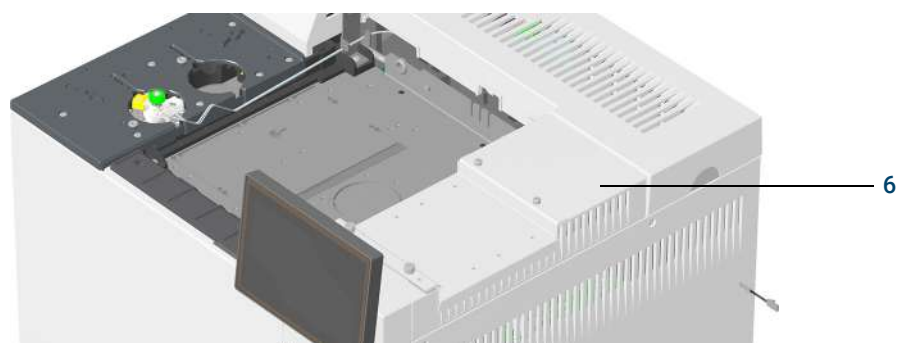
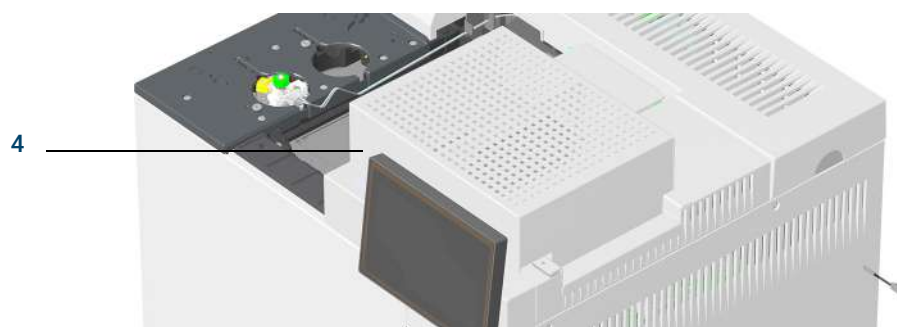
### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### Detector covers (external)

Item	Description	Part number	Qty
1	Single FPD top cover	G3450-81350	
2	Dual FPD top cover	G3450-81370	
3	FPD 3rd position detector cover	G3450-81371	
4	Baxter FPD detector cover assembly	G3450-60707	
5	FPD Electronics top cover assembly	G3450-80540	
6	PDHID electronics top cover assembly	G3450-60708	



**3 Illustrated Parts Breakdown**  
Flame Photometric Detector+ (FPD+)



### 3 Illustrated Parts Breakdown Flame Photometric Detector+ (FPD+)

#### Consumables for the FPD

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- Agilent catalog for consumables and supplies

#### FPD nuts, ferrules, and hardware for capillary columns

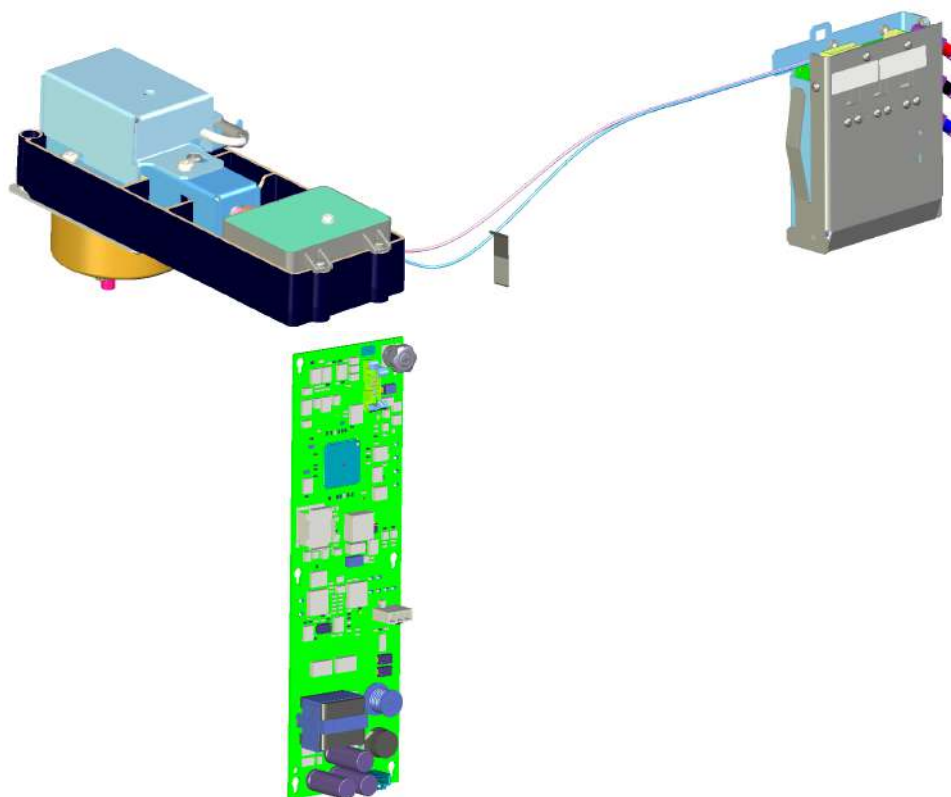
Description	Part number/quantity
Sulfur filter	1000-1437
Sulfur filter spacer	19256-20910
Phosphorus filter	19256-80010
Ignitor replacement kit · O-ring · Spacer · Glow plug	19256-60800
Screw, M3 x 66 mm, T-10	0515-0680
Collar	19256-20690
Spring to secure photomultiplier tube	1460-1160
PM kit, FPD single	G2647-60501

3 **Illustrated Parts Breakdown**  
Nitrogen Phosphorus Detector (NPD)

## Nitrogen Phosphorus Detector (NPD)

G3524A NPD Detector Accessory with EPC (top)

G3524B NPD Detector Accessory with EPC (side)



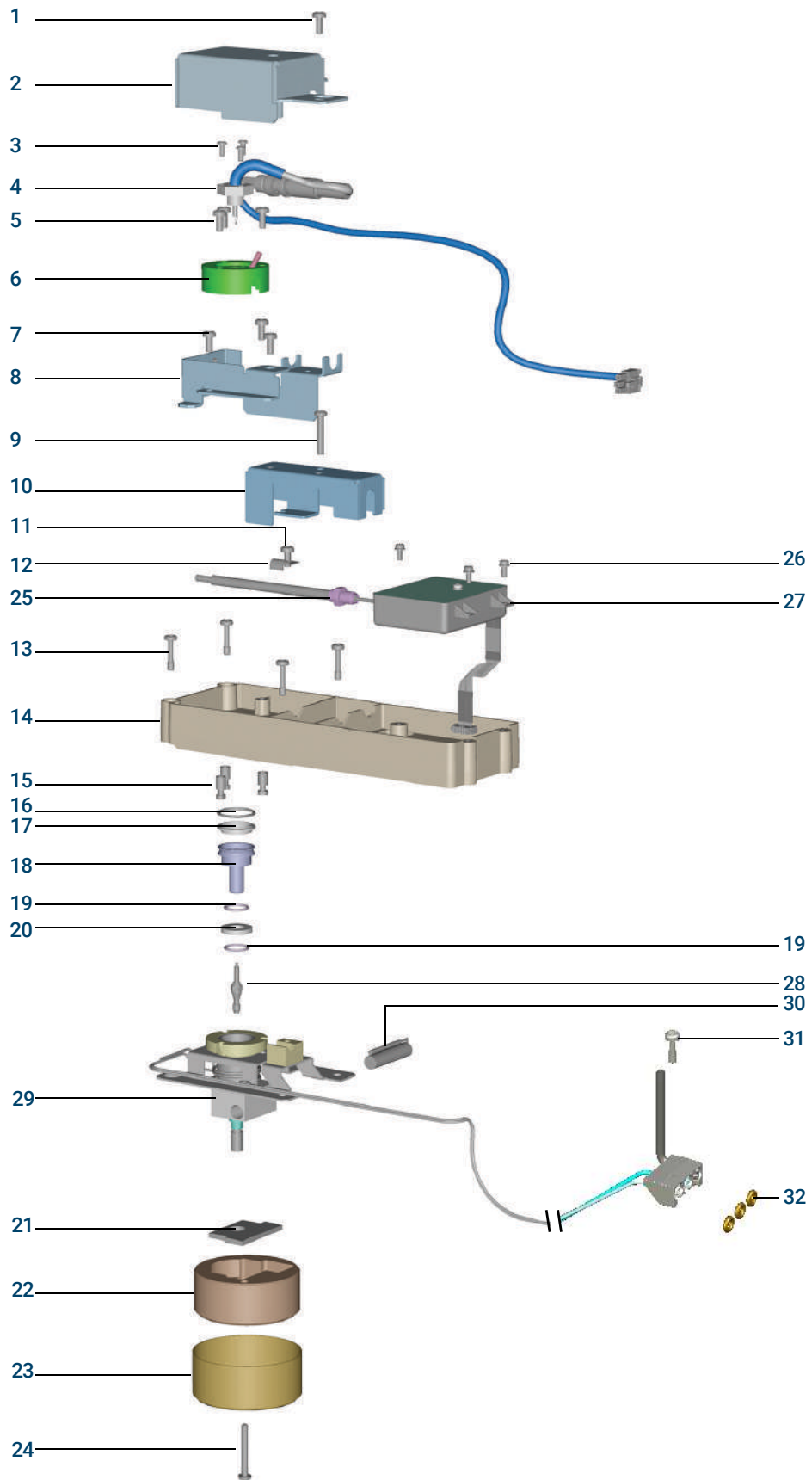
### 3 Illustrated Parts Breakdown Nitrogen Phosphorus Detector (NPD)

#### Nitrogen Phosphorus Detector (NPD) parts

Item	Description	Part number	Qty
1	Screw, M4 × 10 mm, Torx T-20, SST PSVT	0515-2495	1
2	NPD top cover	G4594-00007	1
3	Screw, Machine, pan head, M3 × 8 mm	0515-2726	3
4	NPD blob bead	G3434-60805	1
5	Screw, M4 × 10 mm, Torx T-20, SST PSVT	0515-2495	3
6	NPD lid weldment	G1534-80510	1
7	Screw, M4 × 10 mm, Torx T-20, SST PSVT	0515-2495	3
8	NPD cover base	G4594-00006	1
9	Screw, M4×0.7 × 25 mm, Torx T-20, PSVT	0515-2712	1
10	NPD interconnect cover	G4594-00005	1
11	Screw, M4 × 10 mm, Torx T-20, SST PSVT	0515-2495	1
12	NPD electrometer clip	1400-0015	1
13	Pallet captive screws, M4 × 20 mm	1390-1024	4
14	Detector pallet	G4591-40025	1
15	Lid stop	G1534-20590	3
16	NPD metal C-ring, top	0905-2580	1
17	Upper ceramic insulator	G1534-40020	1
18	NPD collector funnel	G1534-20530	1
19	NPD metal C-ring, lower	0905-1284	2
20	Lower ceramic insulator	G1534-40030	1
21	NPD insulation gasket	G4594-00004	1
22	NPD insulation		1
23	NPD insulation cup		1
24	Screw, machine, pan head, M4 × 35 mm	0515-2559	1
25	FID interconnect assembly	G4591-60815	1
26	Screw, machine, with crest-cup-cone washer, M3 × 8 mm SST PSVT	0515-0372	3
27	NPD electrometer	G3450-61884	1
28	NPD jet (raised jet weldment)	G4594-81000	1
29	NPD Capillary Brazement Assy Bent Tested (includes NPD jet, part 28)	G3450-67740	1
30	Heater/sensor assembly	G1530-67950	1
31	Partner screw	G4585-20086	1
32	O-ring, 12/pk	5180-4181	3



3 Illustrated Parts Breakdown  
Nitrogen Phosphorus Detector (NPD)

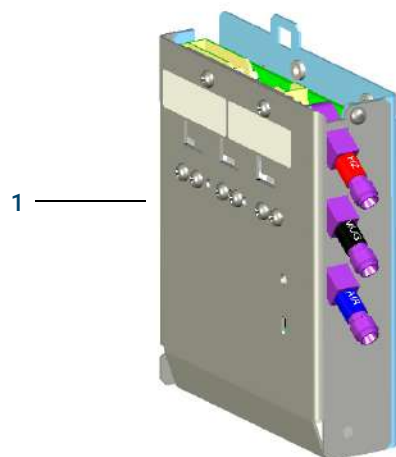


### 3 Illustrated Parts Breakdown

Nitrogen Phosphorus Detector (NPD)

#### NPD detector EPC module

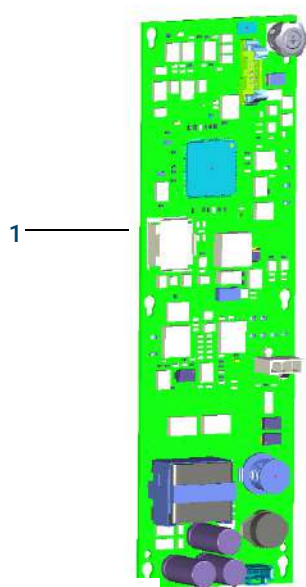
Item	Description	Part number	Qty
1	NPD EPC module	G3450-67454	1



### 3 Illustrated Parts Breakdown Nitrogen Phosphorus Detector (NPD)

#### NPD detector interface PCA

Item	Description	Part number	Qty
1	PCA, NPD interface board 9000 GC	G4594-61820	1
NS	NPD power cable	G4594-60601	1



### 3 Illustrated Parts Breakdown Nitrogen Phosphorus Detector (NPD)

#### NPD auxiliary pneumatics jumper

Item	Description	Part number	Qty
1	NPD auxiliary pneumatics jumper (connects side mount NPD to EPC module)	G3450-60041	1
2	Partner Screw	G4585-20086	1
3	O-ring (12pk)	5180-4181	3



### 3 Illustrated Parts Breakdown

#### Nitrogen Phosphorus Detector (NPD)

#### Consumables for the NPD

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- Agilent Parts Finder (download the latest models)
- Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- Agilent catalog for consumables and supplies

#### NPD parts

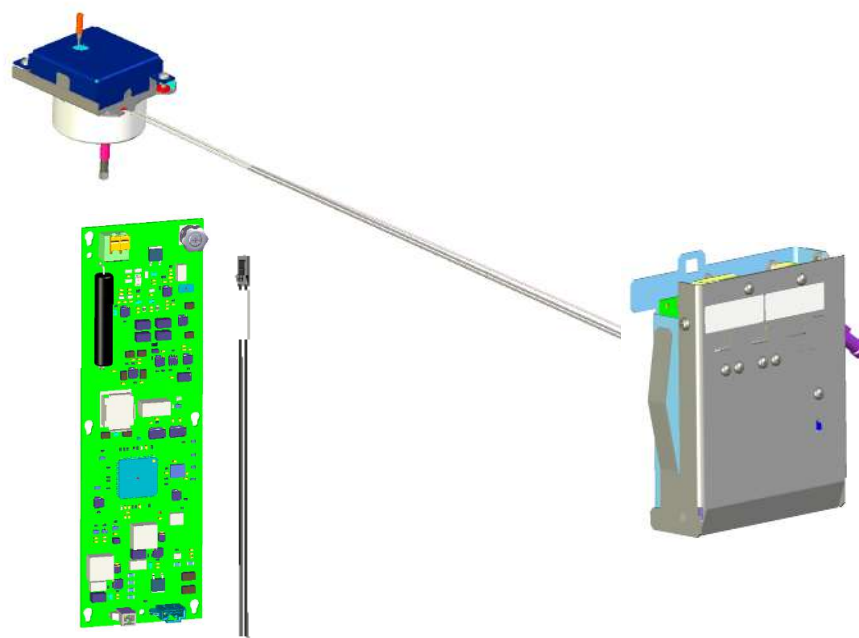
Description	Part number
Collector	G1534-20530
Screw, M3 × 0.5 × 8 mm	0515-0655
NPD Blos bead assembly	G3434-60806
Screw, M4 × 10 mm	0515-2495
J-clamp	1400-0015
NPD ceramic insulator kit · Metal O-rings, top and bottom · Ceramic insulators, upper and lower	5182-9722
NPD chemical sample kit solution of 0.65 ppm azobenzene, 1000 ppm octadecane, 1 ppm malathion in isooctane, 3 ampoules	18789-60060

3 **Illustrated Parts Breakdown**  
Thermal Conductivity Detector (TCD)

# Thermal Conductivity Detector (TCD)

G3560A TCD Detector Accessory with EPC

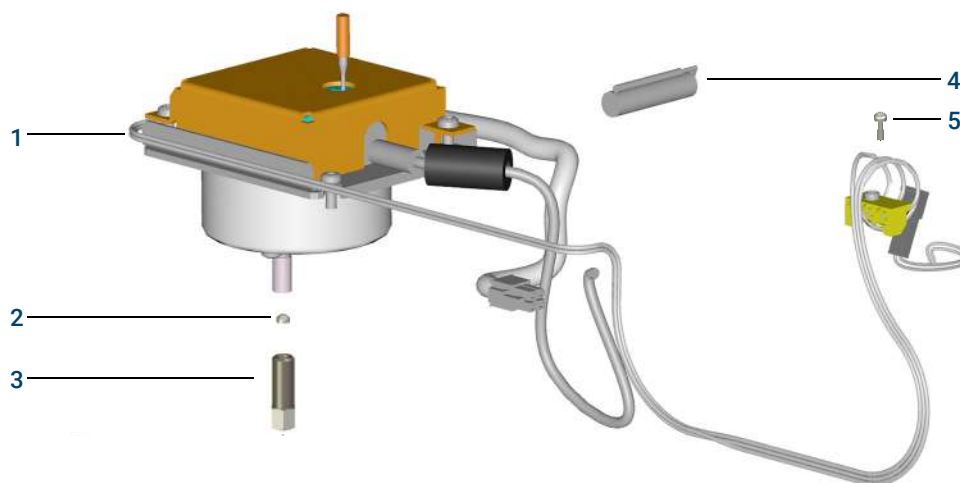
G3561A TCD Detector Accessory with EPC, Side Mount



### 3 Illustrated Parts Breakdown Thermal Conductivity Detector (TCD)

#### Detector module

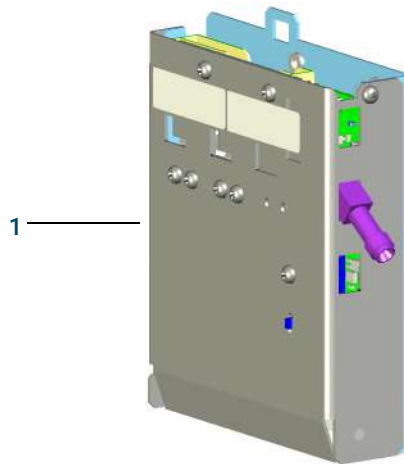
Item	Description	Part number	Qty
1	Capillary TCD	G3450-67451	1
2	Blank ferrule	5181-7458	1
3	Column nut (capillary, universal, 2/pk)	5181-8830	1
4	Detector heater/sensor assembly	G1530-67950	1
5	Partner screw	G4585-20086	1



### 3 Illustrated Parts Breakdown Thermal Conductivity Detector (TCD)

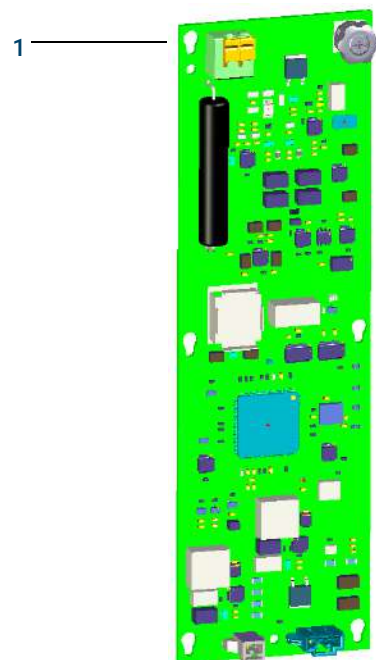
#### TCD detector EPC module

Item	Description	Part number	Qty
1	TCD EPC module	G3450-67451	1



#### TCD detector interface PCA

Item	Description	Part number	Qty
1	TCD interface board PCA	G4592-61810	1

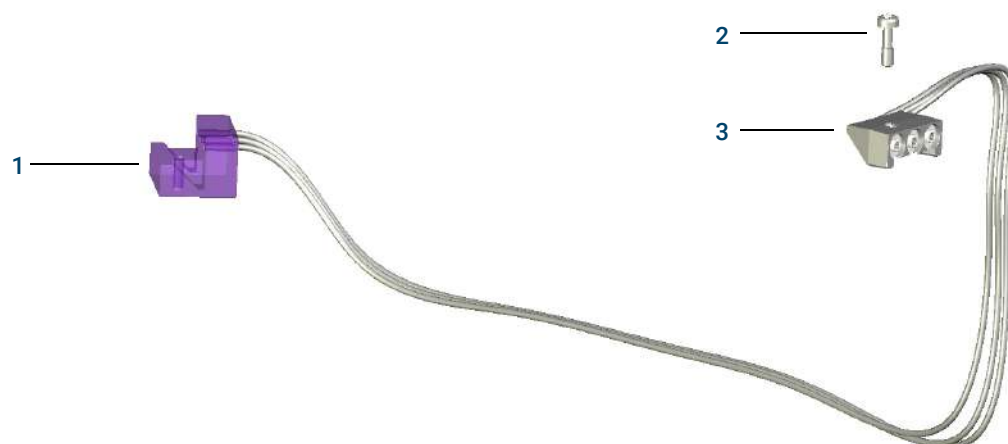




### 3 Illustrated Parts Breakdown Thermal Conductivity Detector (TCD)

#### TCD auxiliary pneumatics jumper

Item	Description	Part number	Qty
1	TCD auxiliary pneumatics jumper (connects side mount TCD to EPC module)	G3450-60041	1
2	Partner Screw	G4585-20086	1
3	O-ring, 12/pk	5180-4181	3



#### Consumables for the TCD

For the most up-to-date and complete listing of consumables, see:

- Agilent Parts Finder (download the latest models)
- Agilent Web site for the latest information (<http://www.chem.agilent.com/store>)
- Agilent catalog for consumables and supplies

#### TCD vent restrictor kit

Use this kit to eliminate baseline signal spikes due to changes in laboratory air pressure due to doors closing and similar events.

**Table 8 TCD vent restrictor kit G1532-60700 parts**

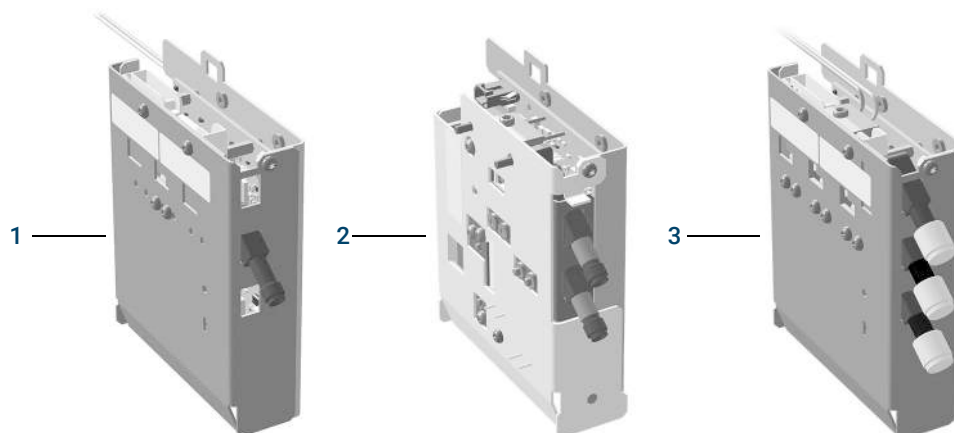
Item	Description	Part number	Qty.
1	Swagelok reducer	0100-0121	1
2	Restrictor	19232-60555	1
3	1/8-inch Graphite/Vespel ferrule (10/pk)	0100-1107	1

## EPC Modules

An EPC module is included with each inlet and detector accessory. Additionally, optional EPC modules are available for use with the 8890 Series GC.

The 7000 and 7010 Series Triple Quadrupole MS instruments require a collision cell gas, controlled by the GC. The table below lists the replacement EPC module part numbers for convenience, but always refer to the mass selective detector documentation for the most up-to-date information.

Item	Description	Part number	Qty
1	EPC for TCD detector	G3450-67451	1
1	EPC for ECD detector	G3450-67452	1
1	EPC for split/splitless inlet	G3450-67401	1
1	NX_SSL_EPC150	G3450-67402	1
1	EPC for MMI inlet	G3450-67404	1
1	EPC for cool on column inlet	G3450-67405	1
1	EPC for purged packed inlet	G3450-67406	1
1	EPC for volatiles interface	G3450-67407	1
1	EPC for PTV inlet	G3450-60409	1
1	EPC for generic inlet	G3450-60449	1
2	EPC for PSD	G3569-64000	1
2	EPC for PCM flow module	G3450-67416	1
3	EPC for FID detector	G3450-67450	1
3	EPC for FPD detector	G3450-67453	1
3	EPC for NPD detector	G3450-67454	1
3	AUX EPC	G3526-67455	1
3	Collision cell module EPC	G3479-64000	1
1	Helium Conservation Module	G3529-60100	1



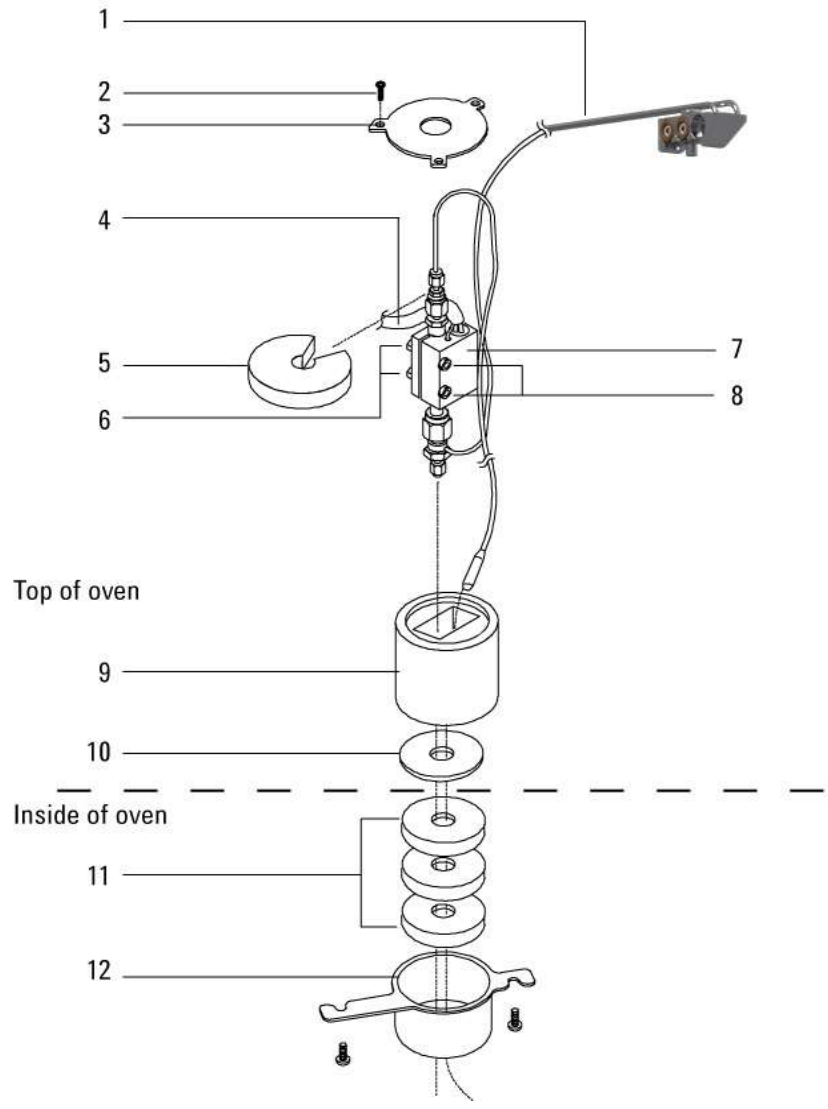
## Nickel Catalyst Accessory

Top level subassemblies for FID detector accessories:

- G3534A Nickel Catalyst Kit

Item	Description	Part number	Qty
	Nickel catalyst assembly (items 2 through 8)	G3540-60100	1
1	Nickel catalyst hydrogen mix weldment	G3450-81315	1
NS	Screw,		
2	Screw, M4 × 12 mm, captive	0515-2711	3
3	Top cover plate	G1543-00085	1
4	Heater/sensor assembly	G1580-61160	1
5	Top insulation	G1543-00100	1
6	Nut, hex, with lockwasher	0535-0043	2
7	Heater block	18900-20835	1
8	Screw, socket M4 × 20 mm	0515-0038	2
9	PP base insulation	G1543-00030	1
10	PP bottom insulation	G1543-00070	1
11	Adapter insulation	19234-60715	3
12	Insulating cup	19234-60700	1

**3 Illustrated Parts Breakdown**  
Nickel Catalyst Accessory



### 3 Illustrated Parts Breakdown

#### Oven

## Oven

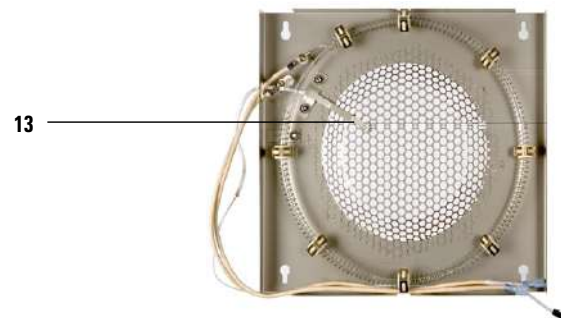
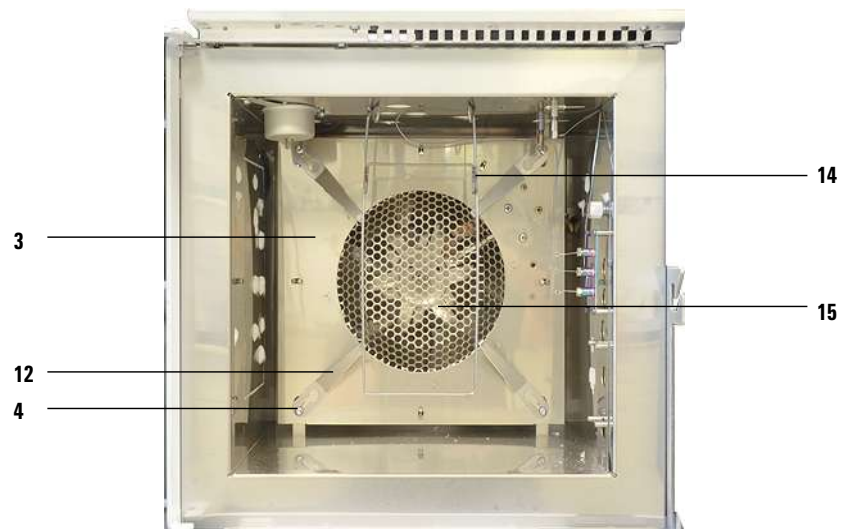
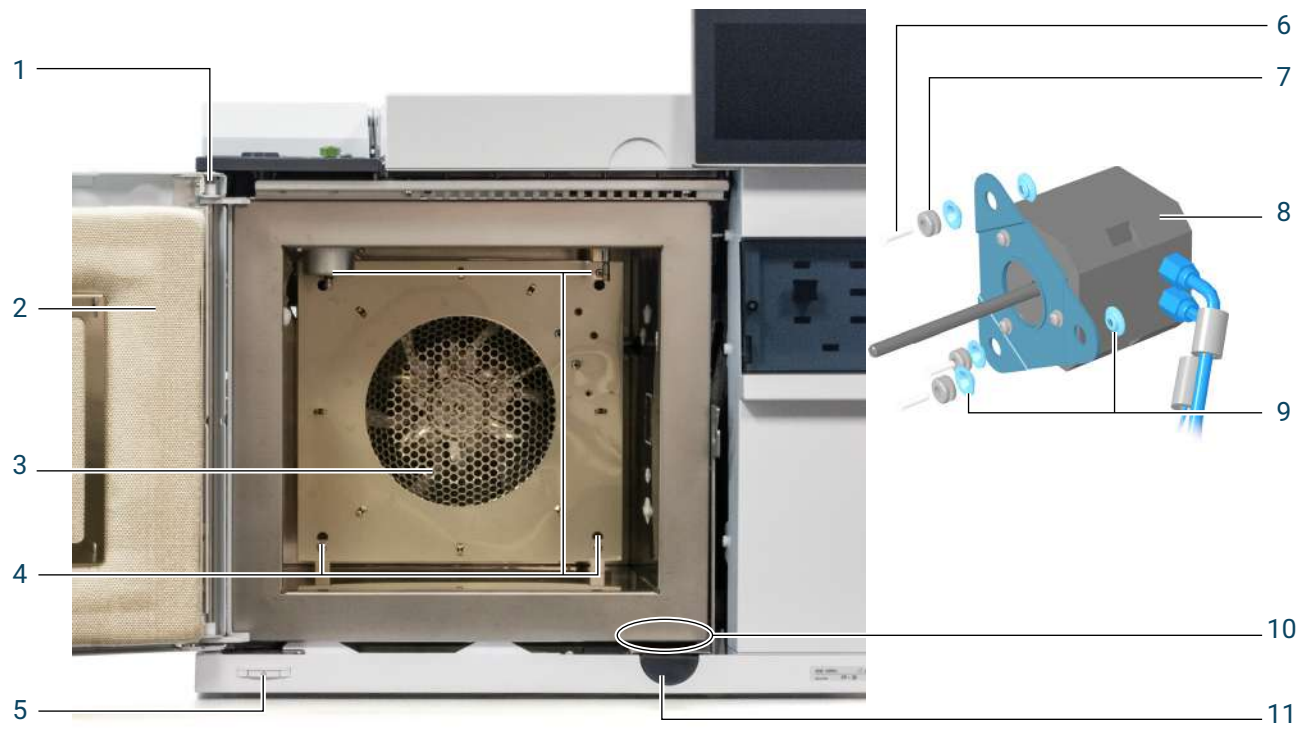
This section contains illustrated parts breakdowns for the following GC components:

- **Oven assembly** on page 128
- **Oven flapper assembly** on page 130
- **CO2 cryogenic cooling** on page 131
- **Liquid nitrogen (LN<sub>2</sub>) cryogenic cooling** on page 132

## Oven assembly

Item	Description	Part number	Qty
1	Door hinge rod	G3430-20518	1
2	Oven door (non-removable)	G2790-67592	1
3	Oven heater shroud assemblies:		1
	–120V USA power	G1530-61610	
	–200V Japan power	G1530-61620	
	–220V Single phase power, Europe, and – 208V USA power, single phase	G1530-61630	
	–220V Single phase power, Hong Kong	G1530-61630	
	–220V Single phase power, China	G1530-61630	
	–220V China power, slow ramp	G1530-61230	
	–220V Israel power	G1530-61630	
	–230V Single phase power, Switzerland, 10 amp	G1530-61670	
	–230V Denmark power, 10 amp	G1530-61670	
	–230V Denmark/Switzerland power, 16 amp	G1530-61650	
	–230V Continental Europe power	G1530-61650	
	–240V Australia power	G1530-61640	
	–240V South Africa/India power	G1530-61640	
	–240V Great Britain/Ireland power	G1530-61640	
	–240V USA power	G1530-61640	
	–240V Australia power, slow ramp	G1530-61640	
4	Screw, M4, Torx T-20, chrome plated	0515-2711	4
5	Power Switch PCA	G3450-61850	1
6	Hex nut, M4 × .7 3.2 mm	0535-0043	3
7	Grommet	G3450-60504	3
8	Motor, oven fan	G3430-60504	1
9	Washer	2190-0712	6
10	Door sensor assembly	G1530-80670	1
11	Oven door button	G3450-60005	1
12	Column clip kit (includes 4 spring clips and screws)	G1530-61580	1
13	Oven sensor assembly	G1530-61030	1
14	Column hanger	1460-1914	
15	Fan blade, stainless steel, and set screw	05890-80270	1

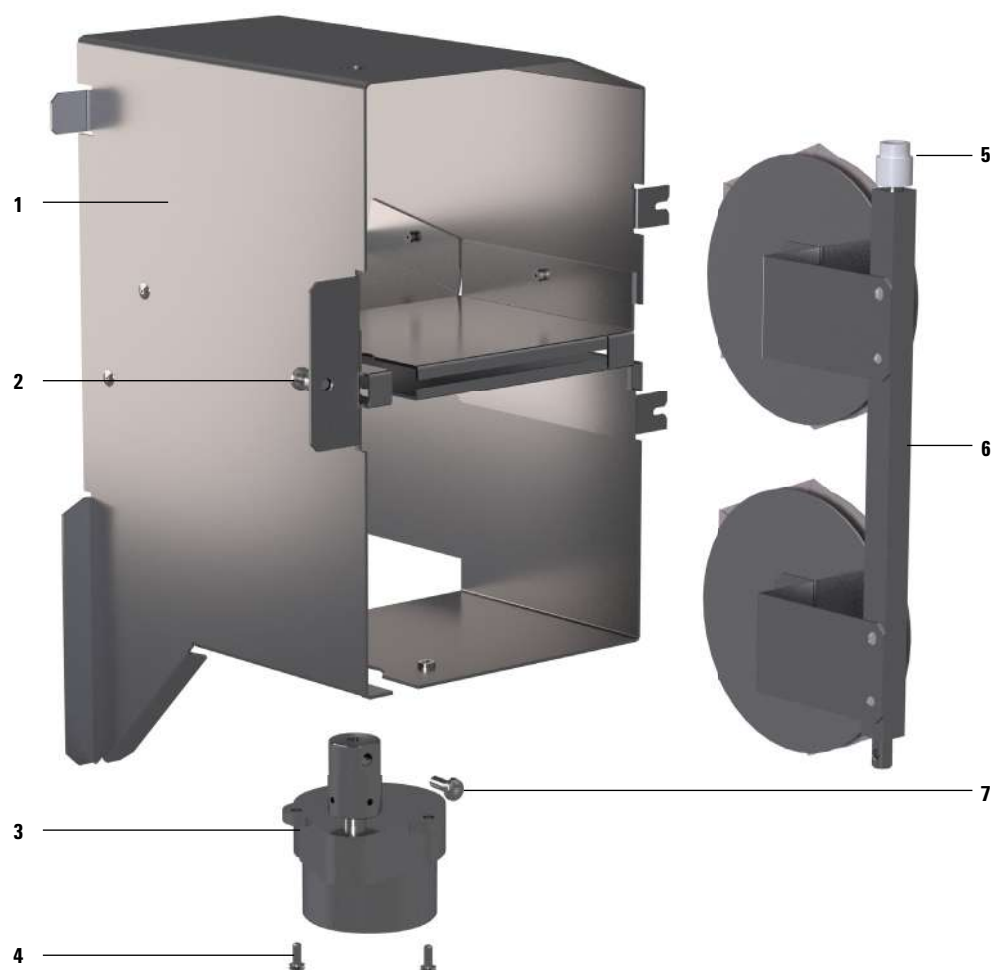
### 3 Illustrated Parts Breakdown Oven assembly



**3 Illustrated Parts Breakdown**  
Oven flapper assembly

## Oven flapper assembly

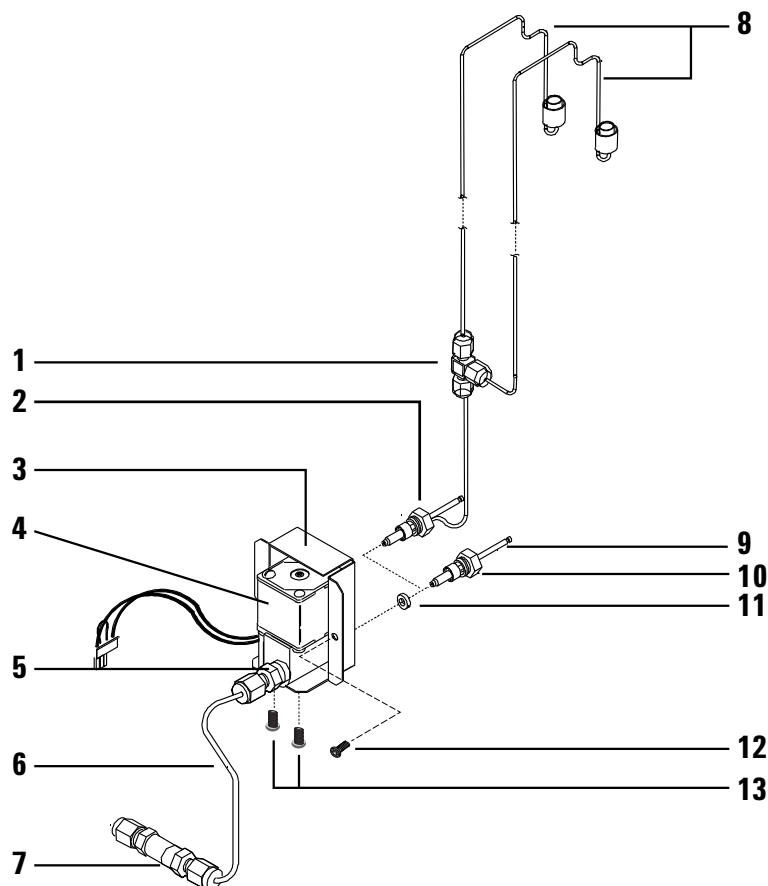
Item	Description	Part number	Qty
1	Dual duct assembly	G3450-81001	1
2	Screw, Torx T-10, M3 × 12 mm (to attach duct to oven)	1390-1023	1
3	Stepper motor assembly	G3440-60026	1
4	Screw, Torx T-10, M3 × 8 mm (to attach motor to duct)	0515-0655	2
5	Flapper bushing	G1530-20550	1
6	Flapper shaft assembly	G3450-81102	1
7	Screw, Torx T-20, M4 × 12 mm (to attach motor to shaft)	0515-2496	1





## CO<sub>2</sub> cryogenic cooling

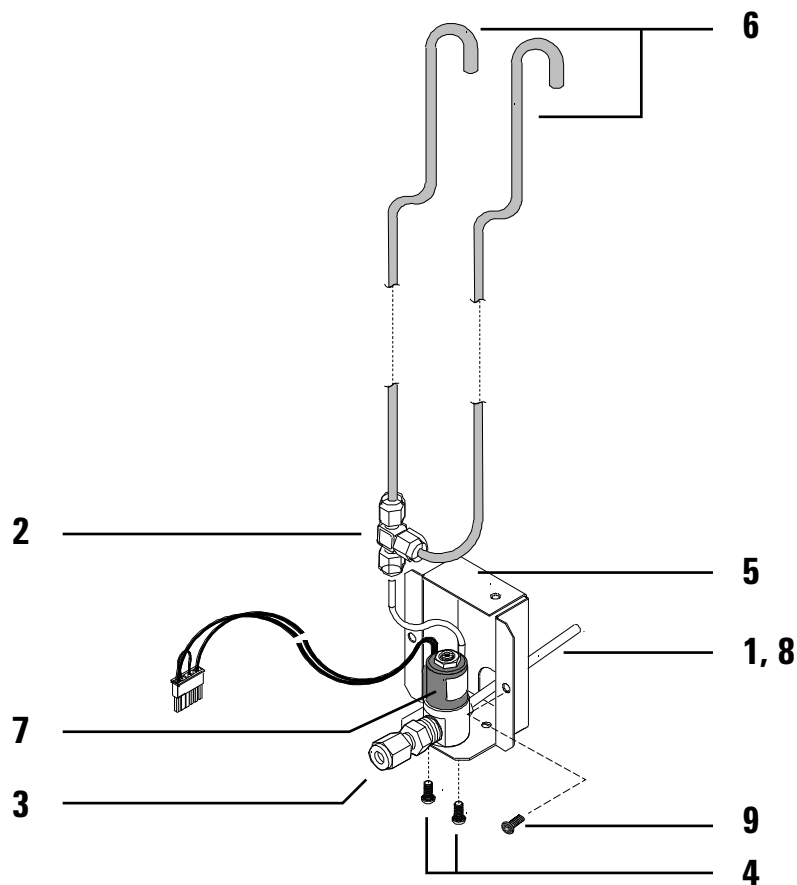
Item	Description	Part number	Qty
1	Tee, brass, 1/8-inch	0100-0090	1
2	CO <sub>2</sub> blast brazement (Cryoblast)	G1565-80550	1
3	Cryo bracket	G1565-00010	1
4	CO <sub>2</sub> cryo valve assembly (recommended level for valve)	G1565-65510	1
5	1/8-inch male connector without O-ring	G1543-80025	1
6	CO <sub>2</sub> inlet tube	G1565-20600	1
7	CO <sub>2</sub> cryo inline filter	3150-0602	1
8	Cryoblast restrictor weldment	G1565-80590	1
9	CO <sub>2</sub> weldment (oven cryo)	G1565-80505	1
10	Clamp screw	G1565-20560	1
11	Gland seal, CO <sub>2</sub>	G1565-20590	1
12	Screw Torx T-20, M4 × 12 mm	0515-2496	2
13	Screw, 8-32, .312-inch	2510-0043	2
NS	PTFE seal	G1565-20840	1



**3 Illustrated Parts Breakdown**  
Liquid nitrogen (LN<sub>2</sub>) cryogenic cooling

## Liquid nitrogen (LN<sub>2</sub>) cryogenic cooling

Item	Description	Part number	Qty
1	N2 blast brazement	G1566-80535	1
2	Tee, 1/8-inch brass union, 2/pk	5180-4160	1
3	Connector, male, 1/4-inch	0100-0208	1
4	Screw, 8-32, .312-inch	2510-0043	2
5	Cryo bracket	G1565-00010	1
6	N2 restrictor tube	G1566-20575	2
7	N2 cryo valve	G3430-60018	1
8	Liquid N2 nozzle	19310-20500	1
9	Screw Torx T-20, M4 × 12 mm	0515-2496	2
NS	Pipe thread sealant tape, 1/4-inch wide	0460-1266	
NS	N2 cryo valve/dual blast assembly	G1566-65508	
NS	N2 cryogenic kit	G1566-65517	



# Valves

Agilent valves can be installed in three locations:

- Standard valve box. Contains up to 4 valves. Installs on the oven top. Isothermal. Requires one or two heater connections.
- Large Valve Oven. Contains up to 6 valves. Installs on the oven top. Isothermal. Requires one heater connection and a separate power supply.
- Side carrier. Contains up to 2 valves. Unheated.

This section contains the illustrated parts breakdowns for valves, valve boxes, pneumatic drivers, and valve actuators. The parts are arranged by valve box.

**Standard Valve Box** on page 134

**Valve box assembly** on page 134

**Valve driver assembly** on page 136

**Valve actuator assembly (1 of 2)** on page 138

**Valve actuator assembly (2 of 2)** on page 139

**Large Valve Oven Parts on page 140**

**LVO Covers** on page 140

**LVO Power and electronics parts** on page 142

**LVO Column and valve mounting hardware** on page 143

**LVO Valve actuator assembly** on page 145

**LVO Solenoid assembly** on page 147

**LVO Columns** on page 148

**LVO Assembly** on page 148

Valves, rotors, and sample loops – See **LVO Solenoid assembly** on page 147

Valve tubing and kits – See **LVO Solenoid assembly** on page 147

## Standard Valve Box

Top level subassemblies for the standard valve box:

- G1580A Valve box for one valve
- G1581A Valve box for two valves

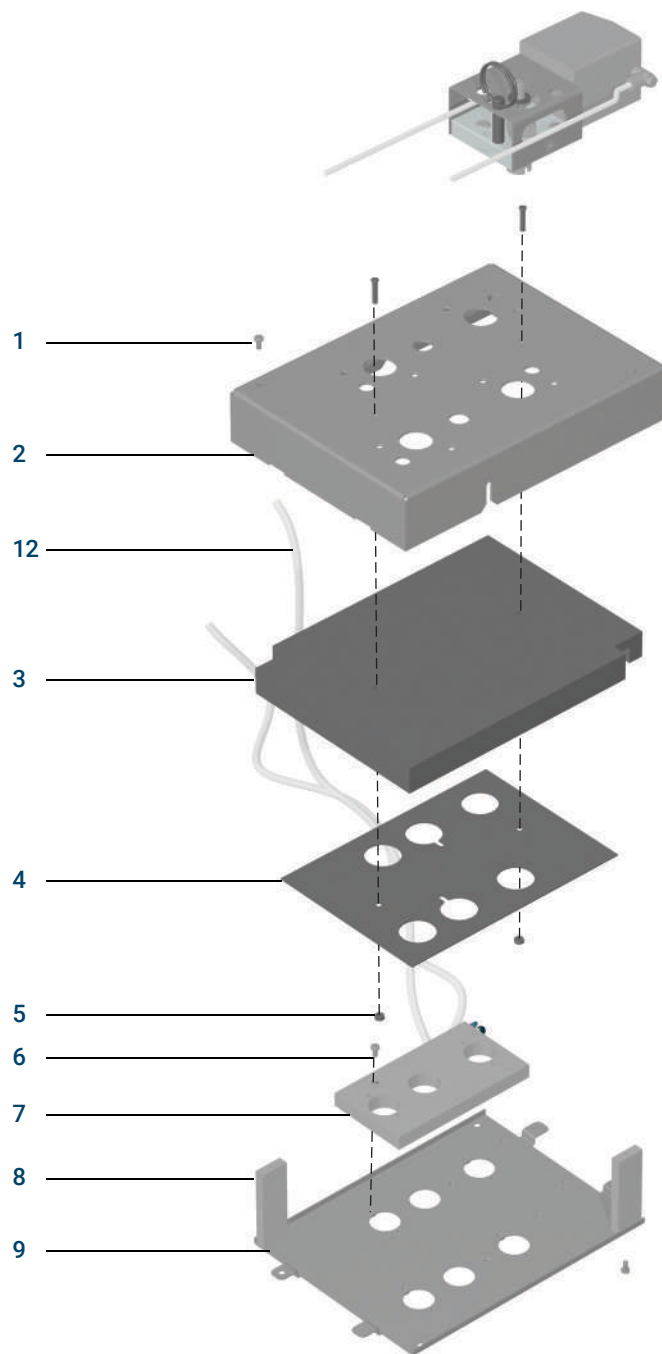
This section contains illustrated parts breakdowns for the following 8890 Series GC valves and related components. The solenoid valve stacks changed, however. Be sure to order the correct version of parts or upgrade the GC to the newer version if needed.

- **Valve box assembly** on page 134
- **Valve driver assembly** on page 136
- **Valve actuator assembly (1 of 2)** on page 138
- **Valve actuator assembly (2 of 2)** on page 139

### Valve box assembly

Item	Description	Part number	Qty
1	Screw, M4 × 12 mm, Torx T-20, chromeplated	0515-2711	6
2	Valve box cover	G1580-00030	1
3	Valve box insulation, top	G1580-00050	1
4	Insulation retainer plate	G1580-00040	1
5	Hex nut, insulation plate		2
6	Screw, M3 × 30 mm, Torx T-10, chromeplated	0515-2525	4
7	Heater block	G1580-20520	1 or 2
8	Standoff, valve box	G1580-20500	2
9	Valve box bottom plate	G1580-00010	1
10	Screw, M3 × 8 mm, Torx T-10, chromeplated	0515-2726	2
11	Heater/Sensor harness cable clamp	1400-0015	2
12	Heater/Sensor assembly	G1580-61140	2

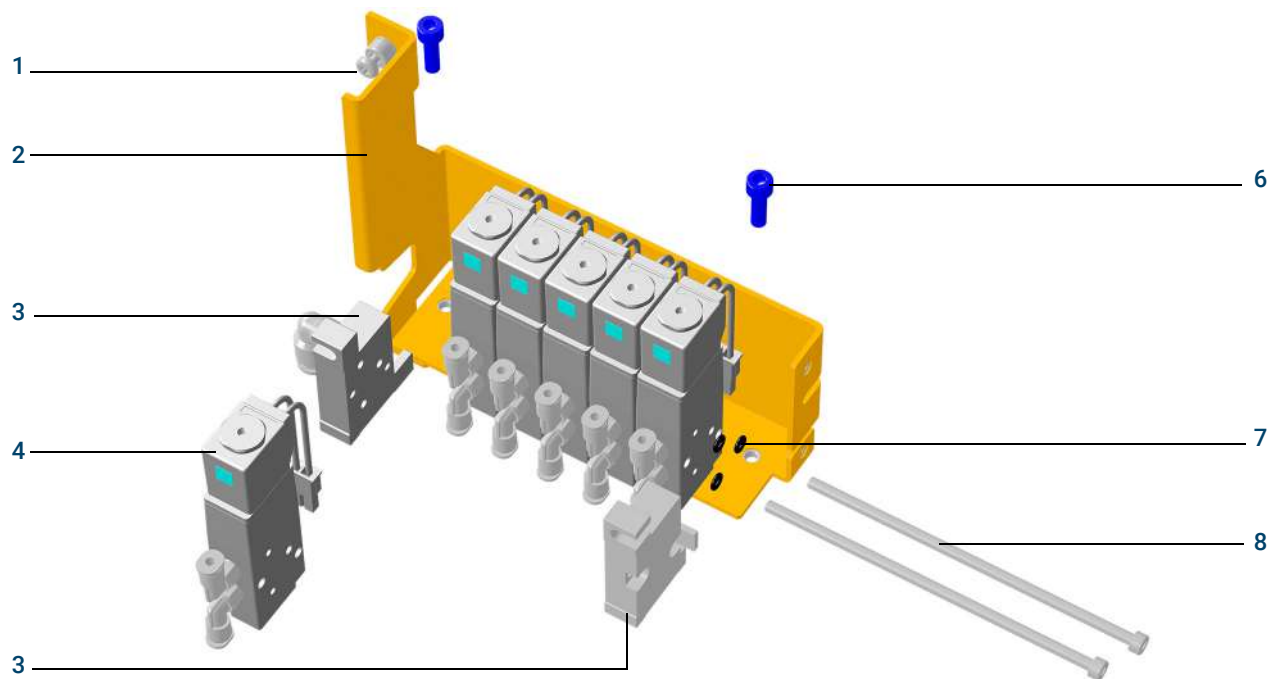
### 3 Illustrated Parts Breakdown Standard Valve Box



### 3 Illustrated Parts Breakdown Standard Valve Box

#### Valve driver assembly

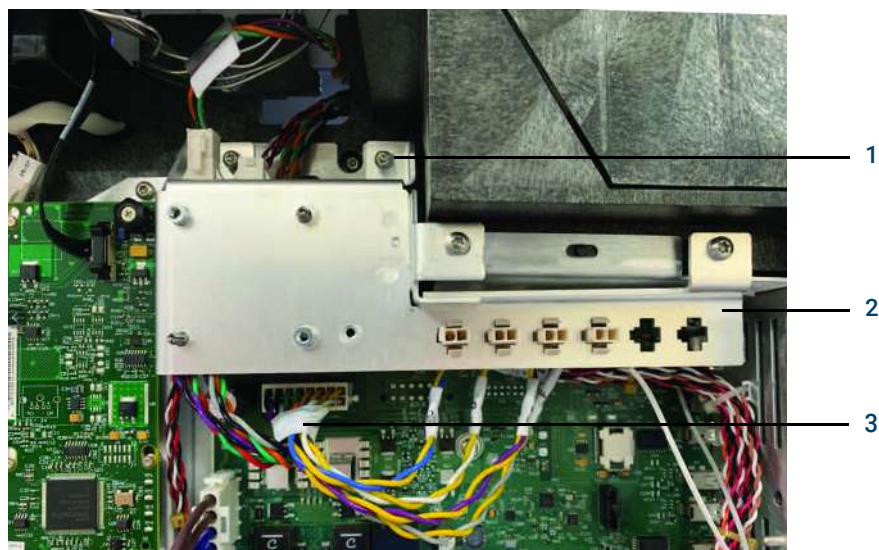
Item	Description	Part number	Qty
1	Captured screw, M4 × 0.7 × 12 mm, Torx T-20	1390-1023	1
2	Valve driver bracket	G3450-60036	1
3	Stack plate kit top	G3450-65116	1
3	Stack plate kit bottom		
4	Solenoid valve	G1580-61096	6
6	Screw M5 × 0.8 16 mm	0515-5043	2
7	O-ring (with valves and end plate kit)	0905-1784	3
8	6 valve stack Captured screw M4 × 0.7 120 mm	0515-6482	2
	5 valve stack Captured screw M4 × 0.7 105 mm	0515-6481	2
	4 valve stack Captured screw M4 × 0.7 85 mm	0515-6480	2
	3 valve stack Captured screw M4 × 0.7 70 mm	0515-6477	2
	2 valve stack Captured screw M4 × 0.7 50 mm	0515-6475	2
	1 valve stack Captured screw M4 × 0.7 30 mm	0515-6476	2



### 3 Illustrated Parts Breakdown Standard Valve Box

#### Valve bracket and wiring harness

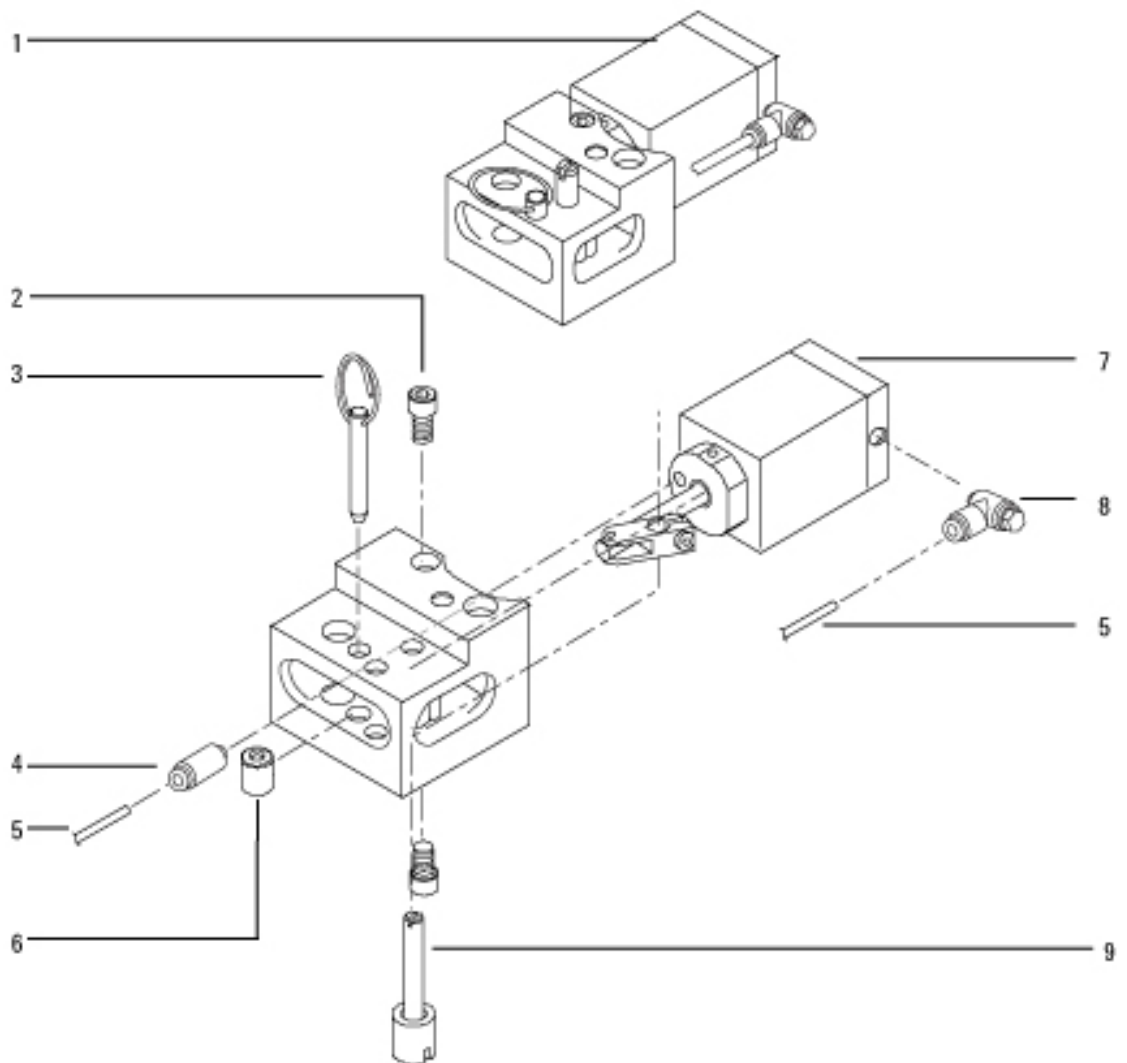
Item	Description	Part number	Qty
1	ScrewM4 × 0.7 × 6 mm, Torx T-20	0515-0684	2
2	heater/sensor panel mount assy	G3450-60535	1
3	Aux A and Valves Cable	G3450-60535	1



**3 Illustrated Parts Breakdown**  
Standard Valve Box

**Valve actuator assembly (1 of 2)**

Item	Description	Part number	Qty
1	Valve actuator assembly	19325-60660	1
2	Modified screw	19325-80030	2
3	Quick-release pin		1
4	Hose fitting	0100-1707	1
5	PTFE tubing 5m, 1.5mm ID, 3mm OD	5062-2483	3
6	36° Actuator limiter for 10 port valves	18900-21000	1
7	End cap		1
8	Elbow fitting	0100-2264	1
9	Coupler/Shaft assembly		1
NS	Hex key, 3 mm	8710-0911	

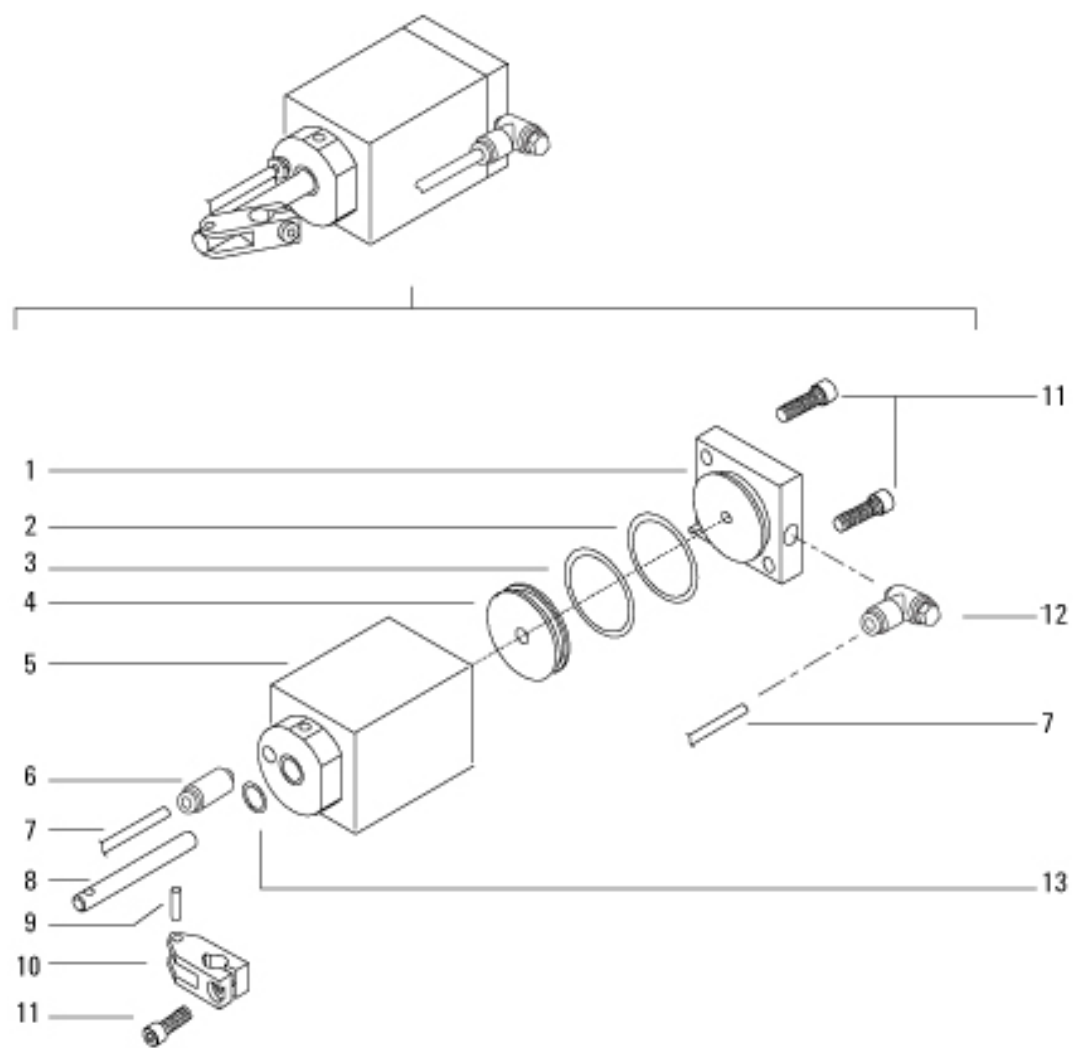




### 3 Illustrated Parts Breakdown Standard Valve Box

#### Valve actuator assembly (2 of 2)

Item	Description	Part number	Qty
1	Cylinder end cap		1
2	O-ring, 1.176-inch id	0905-1405	1
3	O-ring, 1.046-inch id	0905-0463	1
4	Piston	19325-20640	2
5	Actuator cylinder		1
6	Hose fitting	0100-1707	1
7	PTFE tubing 5m, 1.5mm ID, 3mm OD	5062-2483	1
8	Piston rod		1
9	Dowel pin	1480-0017	1
10	Link	19325-80010	1
11	Screw, socket head, M4 x 8 mm		3
12	Elbow fitting	0100-2264	1



## Large Valve Oven Parts

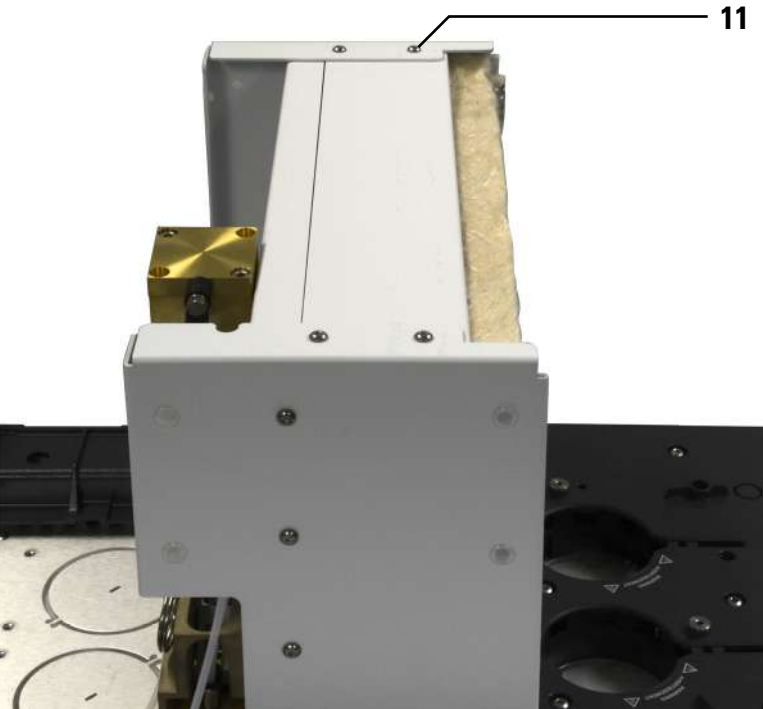
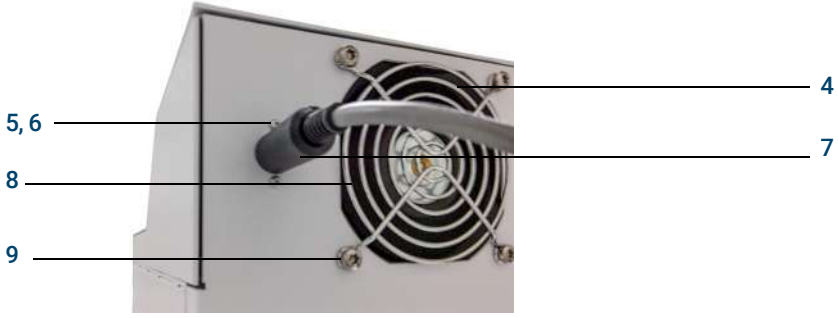
The large valve oven uses some parts in common with the standard valve box and valves, but there are significant differences:

- The valve bodies are the same, but the LVO can accept 4-port and 14-port valves. The valves in the LVO mount onto a hub to improve positioning. Large valves also require a clamp.
- The valve actuators are similar, but the LVO actuators allow you to loosen the adjustment set screw from the “top” of the actuator.
- The LVO uses the same driver solenoids as used for valves in the standard valve box, but the LVO uses a different valve bracket and can mount up to six (6) drivers.

### LVO Covers

Item	Description	Part number	Qty.
NS	Detector cover assembly, for most detectors	G3507-60701	1
NS	Detector cover assembly, for FPD+	G3507-60702	
1	LVO Top cover assembly	G3507-60001	1
4	Fan assembly	G3507-60504	1
5	Screw, M3 × 6 mm long	0515-0930	2
6	Nut, hex	0535-0082	4
7	Sensor fan cable assembly	G3507-60505	1
8	Fan grill	3160-0920	1
9	Screw, M4, 12 mm long	0515-2496	4
11	Screw	0515-0430	

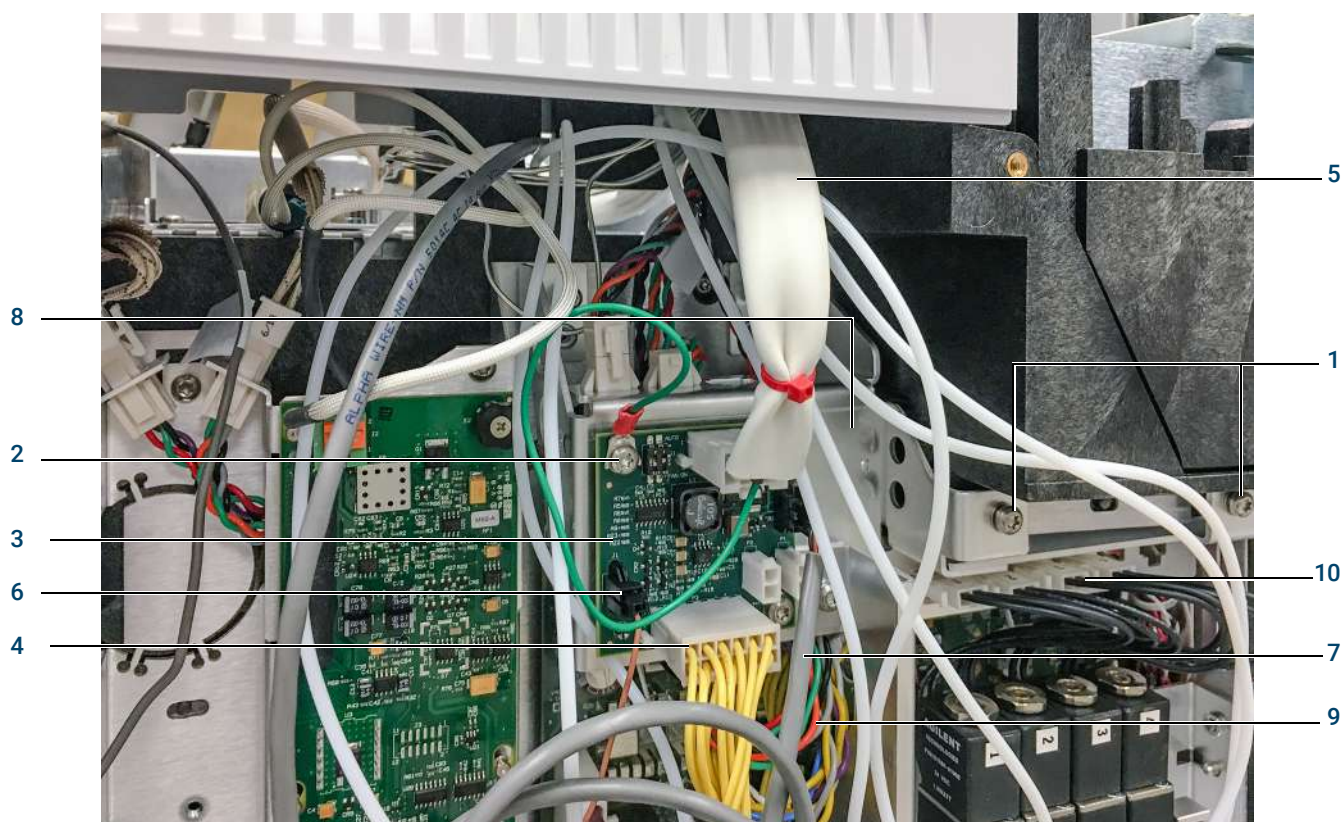
**3 Illustrated Parts Breakdown**  
Large Valve Oven Parts



### 3 Illustrated Parts Breakdown Large Valve Oven Parts

#### LVO Power and electronics parts

Item	Description	Part number	Qty.
1	Screw, captive, T20, M4 × 12 mm		2
2	Screw, M4 × 12 mm, for ground	0515-2496	1
2	Washer-LK INTL No. 8 .168-inch (for ground screw)	2190-0409	1
3	LVO DC drive PCA assembly	G3507-61010	1
4	LVO H/S extension cable	G3507-60503	1
5	Heater sensor assembly cable	G3507-60502	1
6	DC power cable	G3507-60603	1
7	Sensor fan cable assembly	G3507-60505	1
8	LVO solenoid valve and PC board bracket	G3507-00013	1
9	Aux zone/valve box cable	G1530-60660	1
	Sensor assembly cable (to thermistor)	G3507-60506	1
10 (NS)	External valve cable	G1580-60710	



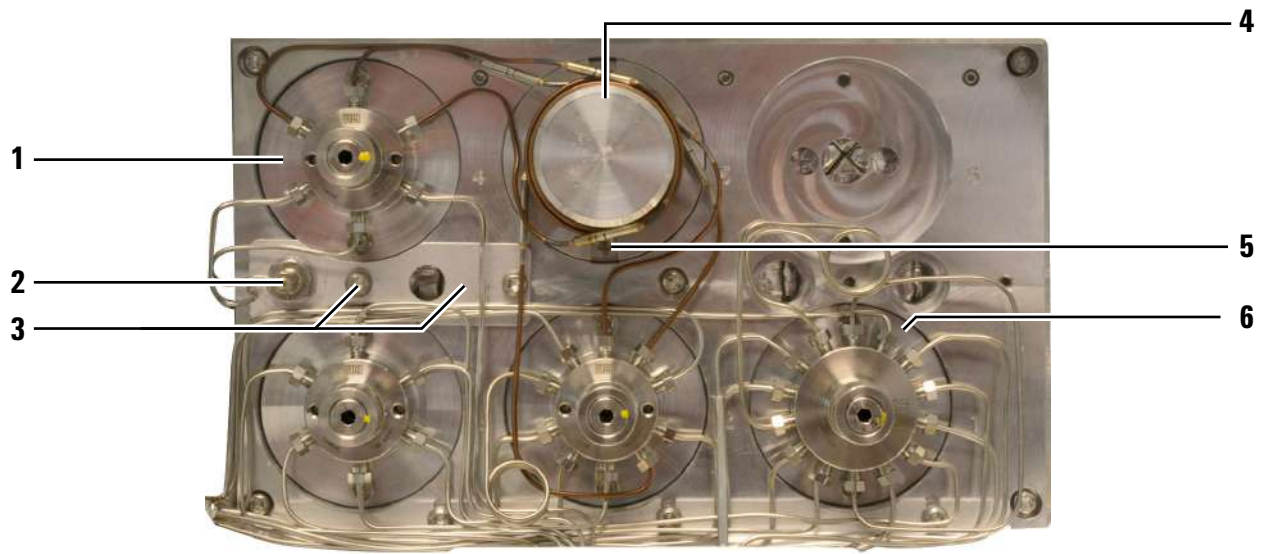
### 3 Illustrated Parts Breakdown

#### Large Valve Oven Parts

#### LVO Column and valve mounting hardware

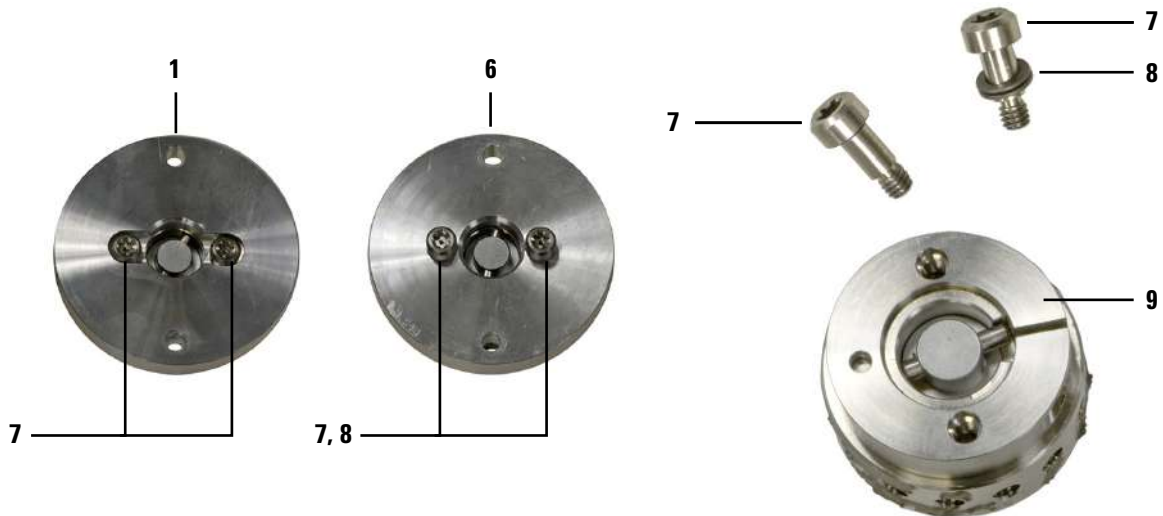
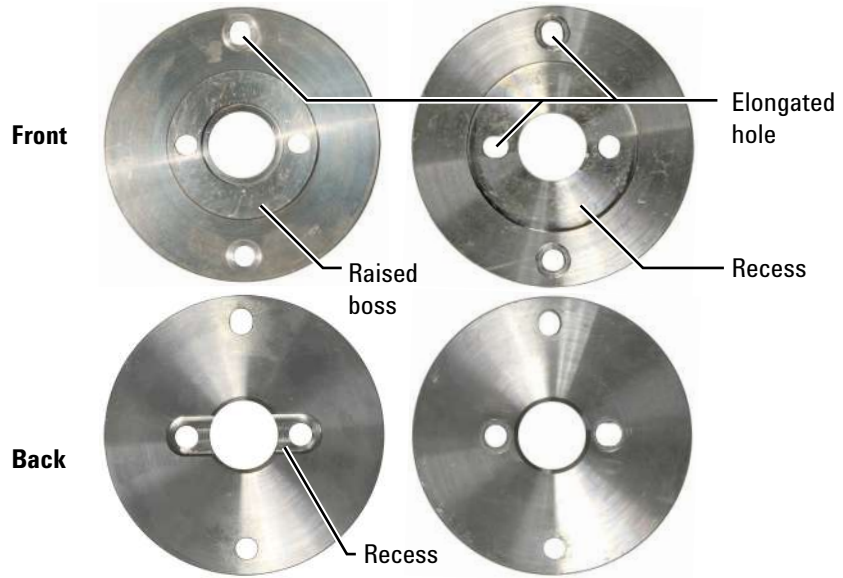
Item	Description	Part number	Qty.
<b>Mandrel kits</b>			
NS	Single position column mandrel, large (includes mandrel, 2 T20 screws, and hub)	G3507-60015	—
NS	Single position column mandrel, 1-inch (includes mandrel and mounting screw)	G3507-60013	—
<b>Mandrels and mounting screws</b>			
4	Column mandrel, large	G3507-60510	1
5	Screw, shoulder, T20, for mounting large mandrel	G3507-80506	2
NS	Column mandrel, 1-inch	G3507-20014	1
NS	Screw, for mounting small mandrel	0515-0669	1
<b>Valve hubs and hardware</b>			
1	Small valve hub, for 4-, 6-, and 10-port valves	G3507-20007	1
6	Large valve hub, for 14-port valves	G3507-20006	1
7	Screw, shoulder, T20, for mounting any valve hub to LVO	G3507-80506	2
8	Shim-Flat, 0.189-in. id, 0.313-in. od, for mounting valve hub to LVO (per screw)	3050-2570	2
9	Large valve clamp (For 14-port valves. Includes #6-32 × 1/2-in. long screw.)	G3507-60006	1
<b>Valve mounting kits</b>			
NS	Small valve mounting kit, for 4-, 6-, and 10-port valves (includes large valve hub and 4 T20 shoulder screws)	G3507-60008	—
NS	Large valve mounting kit, for 14-port valves (includes large valve hub, 4 T20 shoulder screws, 4 washers, and 1 large valve clamp)	G3507-60009	—
<b>Needle valve parts</b>			
2	Needle valve	0101-0633	—
3	Needle valve mounting plate kit (includes plate and screws)	G3507-60012	—

3 Illustrated Parts Breakdown  
Large Valve Oven Parts



Small valve hub for 4-, 6-, and 10-port valves

Large valve hub for 14-port valves

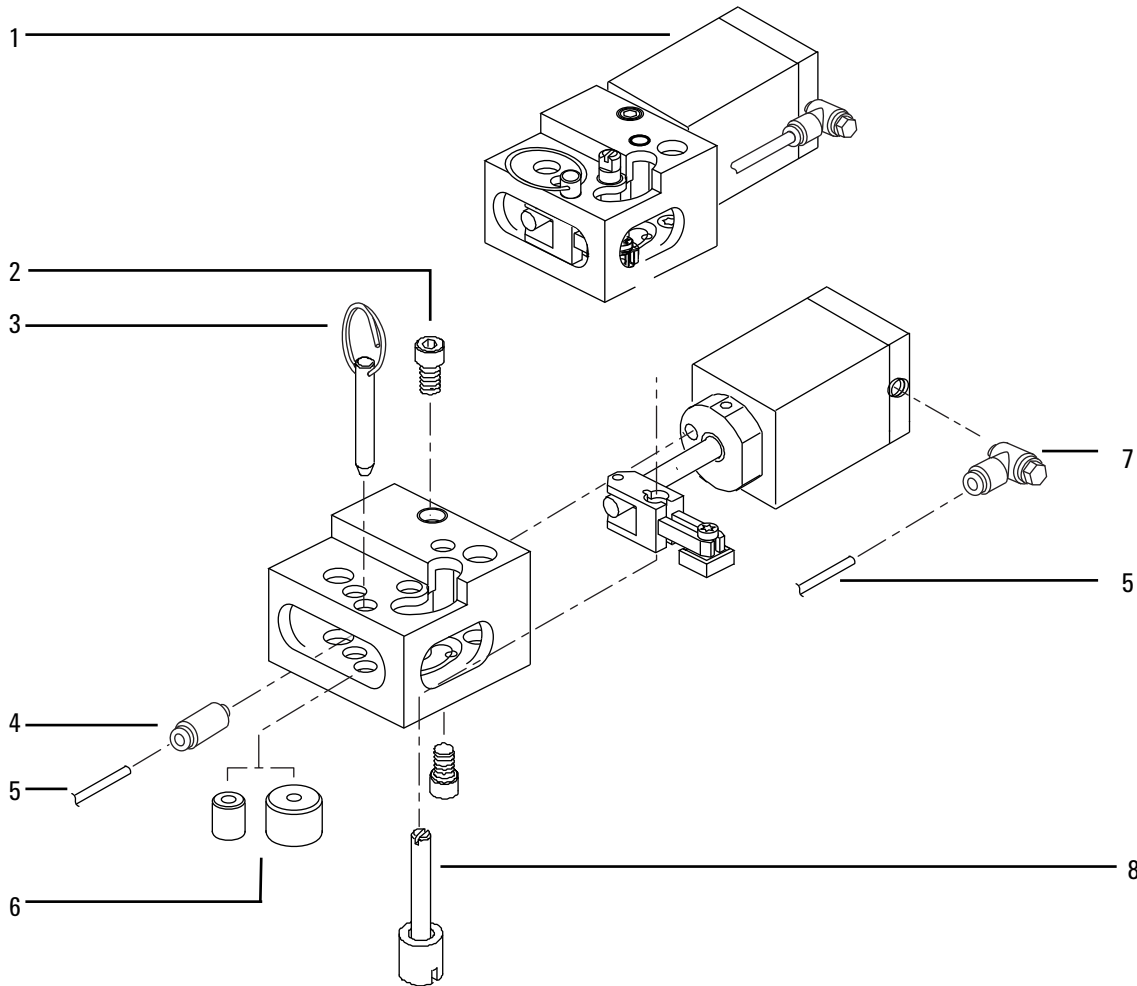




**3 Illustrated Parts Breakdown**  
Large Valve Oven Parts

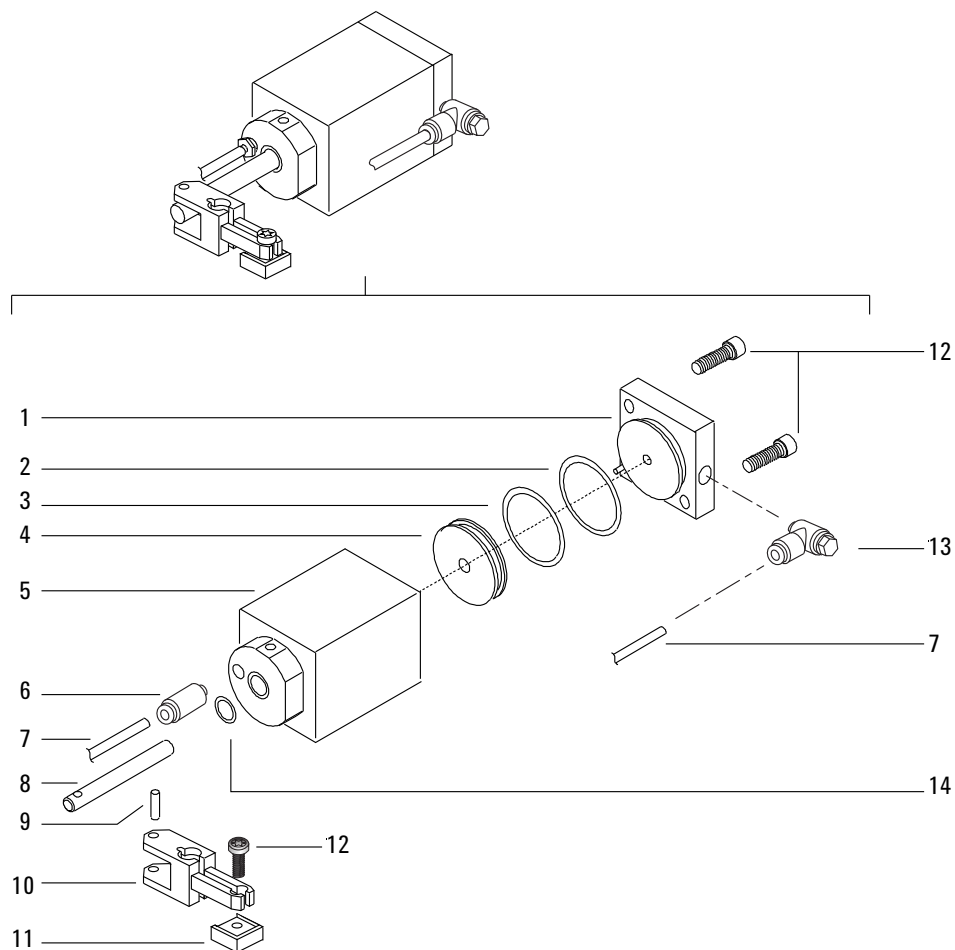
**LVO Valve actuator assembly**

Item	Description	Part number	Qty.
1	Valve actuator assembly (includes elbow fitting and tubing)	G3507-60660	1
2	Modified screw	19325-80030	2
3	Quick-release pin		1
4	Hose fitting	0100-1707	1
5	PTFE tubing 5 m, 1.5 mm id, 3 mm od	5062-2483	3
6	36 ° Actuator limiter (10-port valve) 14 ° Actuator limiter (14-port valve)	18900-21000 G3480-20002	1
7	Elbow fitting	0100-2264	1
8	Coupler/Shaft assembly		1



### 3 Illustrated Parts Breakdown Large Valve Oven Parts

Item	Description	Part number	Qty.
1	Cylinder end cap		1
2	O-ring, 1.176-inch id	0905-1405	1
3	O-ring, 1.046-inch id	0905-0463	1
4	Piston	19325-20640	2
5	Actuator cylinder		1
6	Hose fitting	0100-1707	1
7	PTFE tubing 5m, 1.5mm ID, 3mm OD	5062-2483	1
8	Piston rod		1
9	Dowel pin	1480-0017	1
10	Link (actuator arm)		1
12	Screw, socket head, M4 × 8 mm	G3507-20671	3
13	Elbow fitting	0100-1707	1
11	Link plate	G3507-20003	1
14	Seal	0905-0103	1





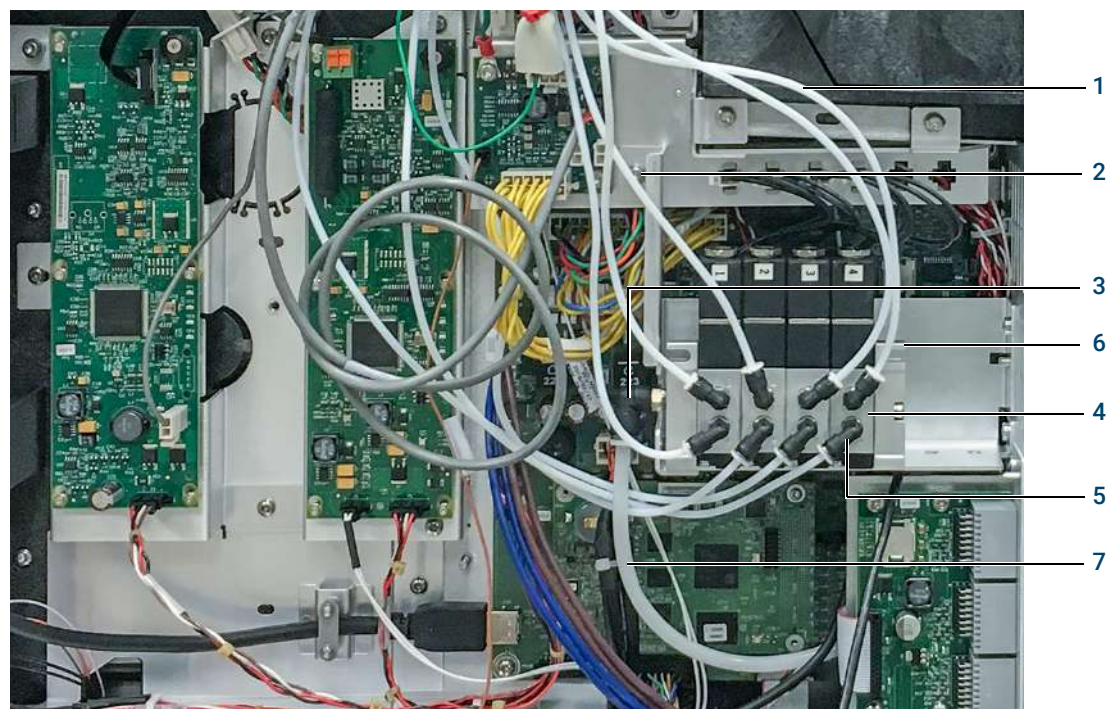
### 3 Illustrated Parts Breakdown

#### Large Valve Oven Parts

#### LVO Solenoid assembly

Item	Description	Part number	Qty.
1	Tubing, Nylon, 10 ft.	G1580-20600	1
2	Captured screw, M4 x 12 mm, Torx T-20		2
3	Fitting elbow male 24.8 mm	0100-3028	1
4	Solenoid valve with screws	G1580-61096	1
5	10-32 Male x 1/8-inch elbow fitting	0100-2745	2
6	Solenoid valve end plate kit	G3450-65116	1
7	Exhaust tubing, 1/4-inch od, 120 inch	0890-1489	1
10	Screw, to assemble valve stack to bracket	5181-8387	2
NS	Screws for one valve stack (M4 x 30 mm)	5185-8381	2
NS	Screws for two valve stack (M4 x 50 mm)	5185-8382	2
NS	Screws for three valve stack (M4 x 70 mm)	5185-8383	2
NS	Screws for four valve stack (M4 x 85 mm)	5185-8384	2
NS	Screws for five valve stack (M4 x ___ mm)	5185-8384	2
NS	Screws for six valve stack (M4 x ___ mm)	5185-8384	2

\*Includes solenoid valve, end plates, elbow fittings, tubing, and screws.



### 3 Illustrated Parts Breakdown

#### Large Valve Oven Parts

#### LVO Columns

Packed columns for the LVO must be custom-ordered from Agilent. Contact your local sales representative or visit the Agilent website at <http://www.chem.agilent.com/en-US/products-services/Columns-Sample-Preparation/GC-GC-MS-Columns/packedcolumns/Pages/CustomPacked.aspx>.

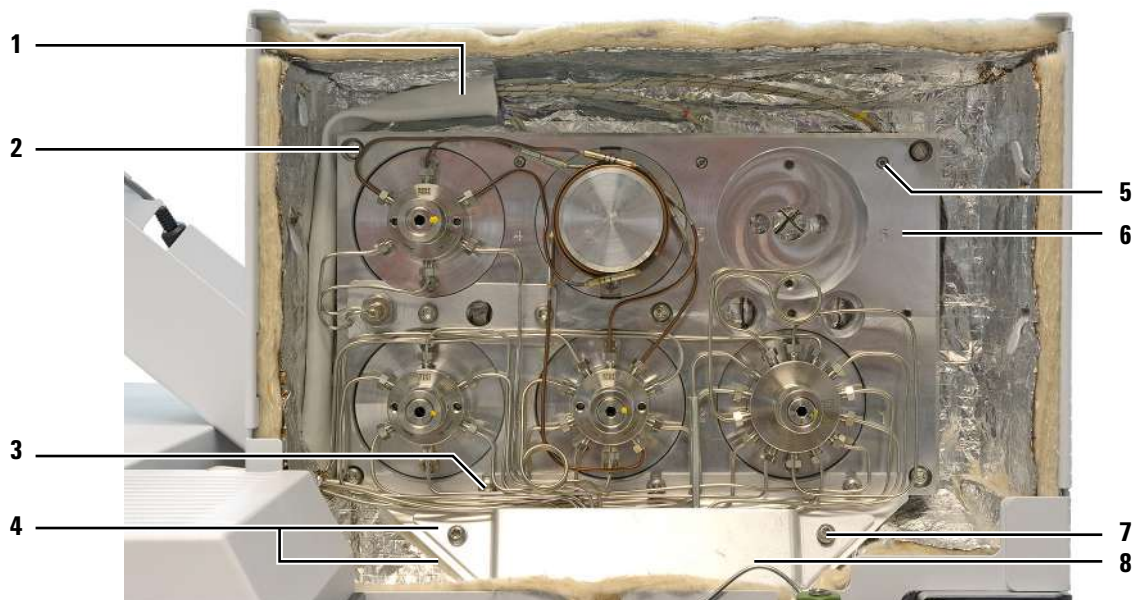
When ordering a column for an LVO, be sure to specify the following information in addition to the normal information required for custom packed columns:

- Mandrel size (large or small)
- The column is intended for use in a large valve oven

Note that glass (rigid) columns are not available.

#### LVO Assembly

Item	Description	Part number	Qty.
1	Heater/sensor assembly cable	G3507-60502	1
2	Screw, M4 × ___ mm long, T20		4
3	Screw, M4 × ___ mm long, T20		3
4	Bottom plate tubing guide assembly (includes bottom plate tubing guide and 2 mounting screws)	G3507-60002	1
5	Set screw, SST, M4 × 6 mm long (heaters)	0515-5659	3
6	Heated valve block	G3507-20000	1
7	Screws (for bottom plate tubing guide)	0151-0043	2
8	Bottom plate tubing guide	G3507-00017	1



**3 Illustrated Parts Breakdown**  
Valco W-Series minivalves, rotors, and parts

## Valco W-Series minivalves, rotors, and parts

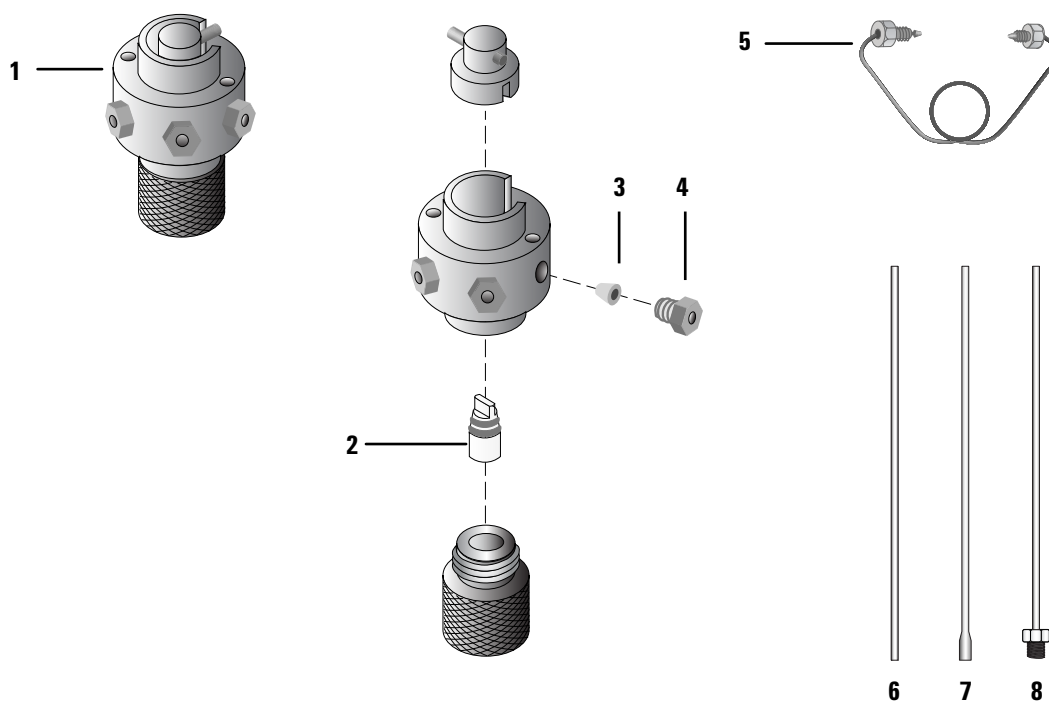
Item	Description	Part number	Qty.
1	<b>Valve assembly</b>		1
	<b>Gas sampling valves</b>		
	6-port valve (225 °C max)	5062-9508	
	6-port valve (350 °C max)	0101-0584	
	6-port valve (Hastelloy, 225 °C max)	5062-9509	
	10-port valve (225 °C max)	5062-9510	
	10-port valve (350 °C max)	0101-0585	
	10-port valve (Hastelloy, 225 °C max)	5062-9511	
	14-port valve (225 °C max)	0101-143	
	14-port valve (Hastelloy)	0101-1472	
	<b>Liquid sampling valves</b>		
	4-port valve (internal sample injector) (0.2 µL, 1000 psi, Option 850)	0101-0636	
	4-port valve (internal sample injector) (0.5 µL, 1000 psi, Option 852)	0101-0637	
	4-port valve (internal sample injector) (1.0 µL, 1000 psi, Option 854)	0101-0638	
	4-port valve (internal sample injector) (0.5 µL, 5000 psi, Option 856)	0101-0639	
2	<b>Rotor</b>		1
	<b>General purpose</b>		
	6-port valve (225 °C max)	5181-7459	
	10-port valve (225 °C max)	5181-7460	
	6-port valve (350 °C max)	1535-4952	
	10-port valve (350 °C max)	1535-4954	
	<b>Rotors, standard pressure liquid sample</b>		
	0.2 µL 4-port (1000 psig max)	5062-3563	
	0.5 µL 4-port (1000 psig max)	5062-3562	
	1.0 µL 4-port (1000 psig max)	5062-3559	
	<b>Fittings</b>		
3	Ferrule, 1/16-inch, Valco one piece, SS, 10/pk	5181-1292	1 per port
4	Nut, 1/16-inch stainless steel Valco 10/pk	5181-1291	1 per port
5	<b>Gas sample loops</b>		1
	Sample loop, 0.250 mL	0101-0303	
	Sample loop, 0.500 mL	0101-0282	
	Sample loop, 1.0 mL	0101-0299	
	Sample loop, 2.0 mL	0101-0300	
	Sample loop, nickel, 2.0 mL	0101-0955	
	Sample loop, 5 mL	0101-0301	

### 3 Illustrated Parts Breakdown

Valco W-Series minivalves, rotors, and parts

Item	Description	Part number	Qty.
	Sample loop, 10 mL	0101-0302	
	Sample loop, Sulfinert, 25 mL	G1540-30024	
	Sample loop, Sulfinert, 0.5 mL	G1540-30025	
	Sample loop, inert, 1.0 mL	G1540-30026	
	Sample loop, Sulfinert, 2.0 mL	G1540-30027	
	Sample loop, Sulfinert, 5.0 mL	G1540-30028	
<b>Tubing</b>			
6	Valve tubing, 1/16-in 279 mm SS	18900-20250	
	Valve tubing, 1/16-in 400 mm SS	18900-20280	
	Valve tubing, 1/16-in 375 mm SS	18900-20281	
	Valve tubing, 1/16-in 560 mm SS	18900-20300	
7	Valve tubing, 1/16-in with 1/8-in. flare end 360 mm SS	1530-2163	
	Valve tubing, 1/16-in with 1/8-in. flare end 520 mm SS	1530-2167	
8	Valve tubing, 1/16-in. with 1/8-in. bulkhead fitting, SS	07675-80050	
	Valve tubing, 1/16-in. with 1/8-in. bulkhead fitting, Nickel	18900-80255	
	CPM 1/16-in. × 0.10-in. id Tube Assy, 50 cm inert	G1580-60060	
	CPM 1/16-in. × 0.20-in. id Tube Assy, 50 cm inert	G1580-60062	
	CPM 1/16-in. × 0.10-in. id Tube Assy, 50 cm	G1580-80060	
	CPM 1/16-in. × 0.20-in. id Tube Assy, 50 cm	G1580-80062	

Valves consist of a driver, valve body, rotor, and preload assembly.



# Electronics and Fans

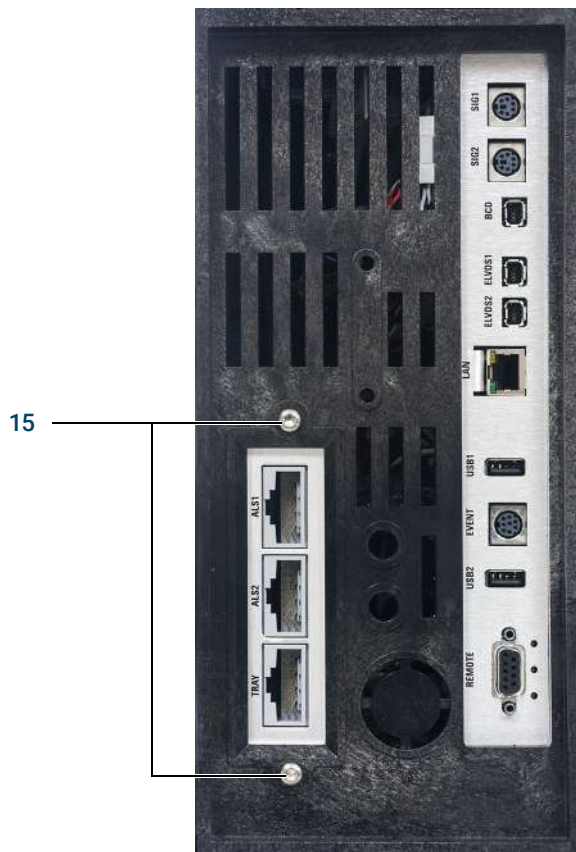
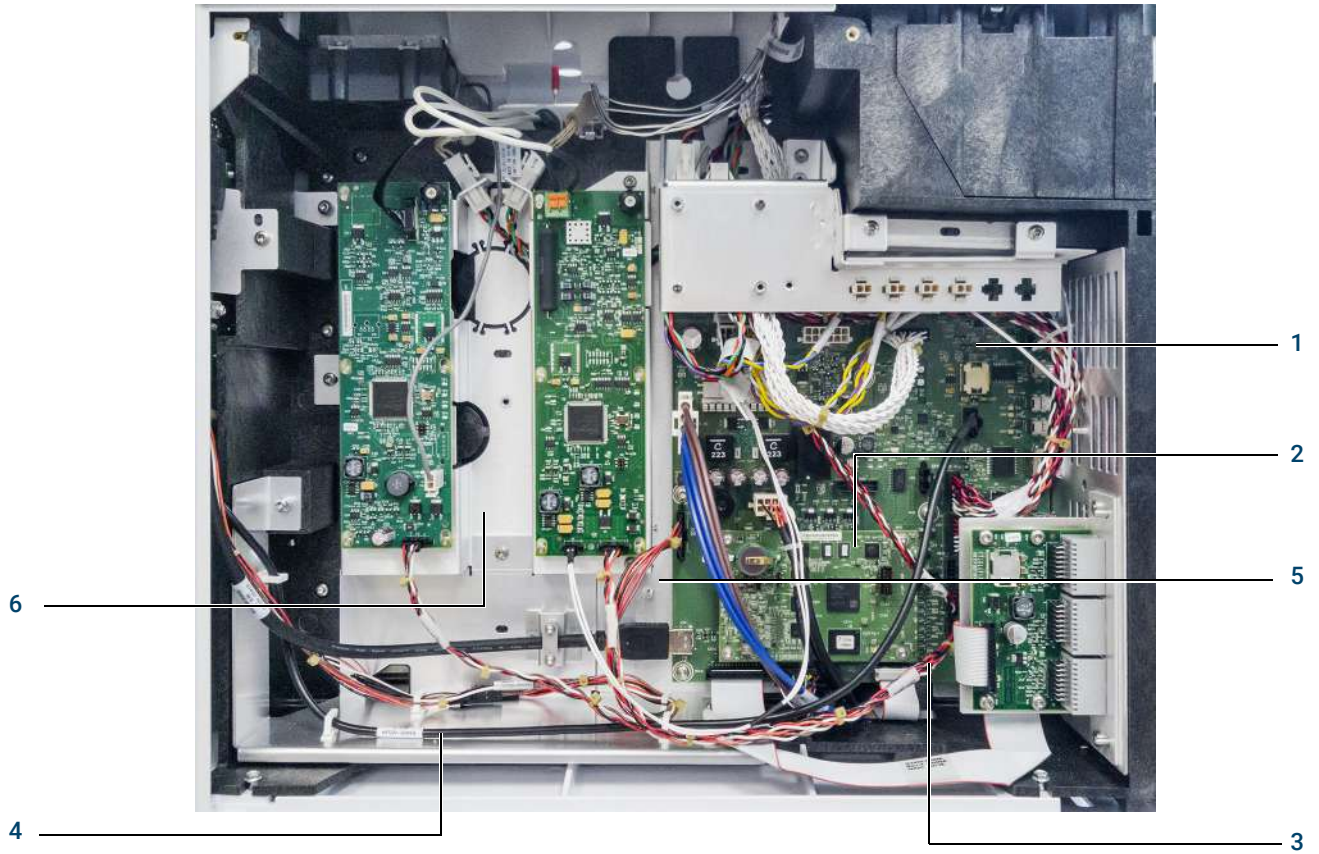
This section contains illustrated parts breakdowns for the following 8890 GC electrical components.

## Electronics carrier

Item	Description	Part number	Qty
NS	Fuse, ALS controller PCA, 7A 125V (ALS control PCA)	2110-0961	1
1	Analog and Power board	G3450-61811	1
2	8890A Programmed Zynq Board (logic board)	G3450-61111	1
3	Harness, 4-wire communication bus (LVDS communications harness)	G3430-60513	1
4	Harness, keyboard and display	G3430-60514	1
5	Backplane for Analog and power board	G3430-00114	1
6	Backplane for Detector signal boards	G3430-00085	1
7	Grounding screw, M4 × 25 mm, T-20 (for #1)	0515-2712	1
8	Screw, M4 × 6 mm	0515-2832	10
9	Screw, self-tapping	0515-4897	3
10	Nut, hex, with lock washer M4 × 3.2 mm thick	0535-0043	1
11	Grounding screw, M4 × 12 mm, T-20 (for #6)	0515-2496	1
12	ALS Controller Assembly	G3450-67005	1
13	Cable, RS-232, 7683 ALS controller	G2612-60510	1
14	Backplane right logic board	G3430-00114	1
15	Screw, T-20, M4 × 12 mm (attach ALS board to carrier)	0515-2496	2



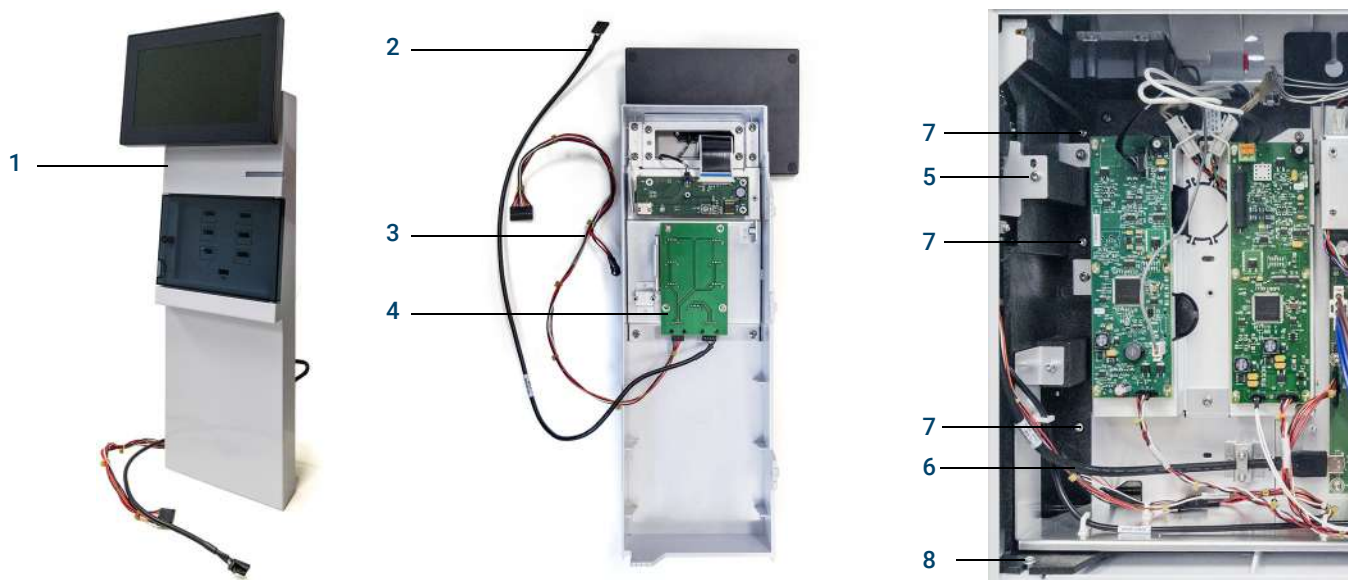
3 Illustrated Parts Breakdown  
 Electronics carrier



## Power Option Conversion Kit

### Keyboard and Display

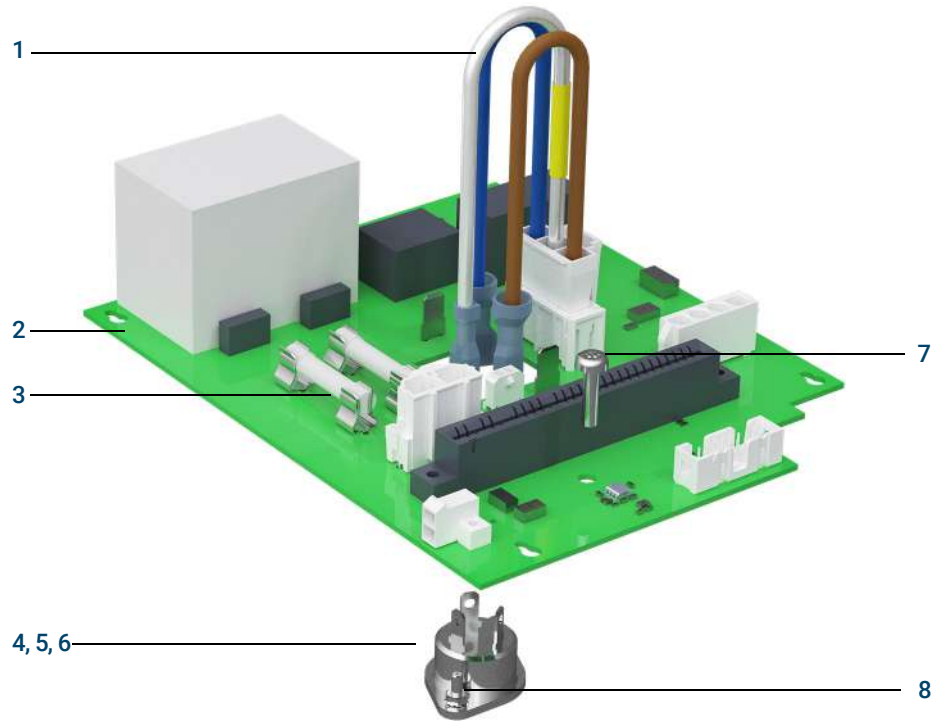
Item	Description	Part number	Qty
1	User interface assembly 8890	G3450-67004	1
2	Cable	G3450-60569	1
3	Cable		
4	Interface PCA	G3450-61860	1
5	Screw, M4 x 6 mm, T-20	0515-0684	2
6	HDMI cable	G3450-60562	1
7	Screw, T-20	0515-1143	3
8	Hex washer	0515-4897	1



**3 Illustrated Parts Breakdown**  
AC circuit board components

## AC circuit board components

Item	Description	Part number	Qty
1	Triac jumper		3
2	AC board	G3450-61821	1
3	Ceramic fuse, type x, 20A/25	2110-0098	2
4	Triac kit, includes triac (item 5) and thermal link pad (item 6)	G1530-61340	
5	Triac		
6	Pad (under triac)		
7	Screw, M4 x 20 mm long	1390-1024	1
8	Hex nut	0535-0031	2





## AC power

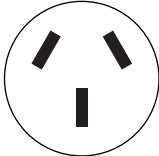
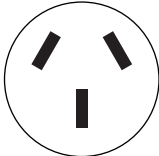
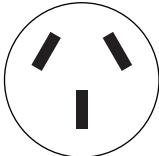

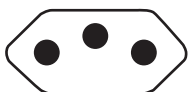

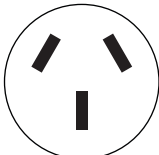
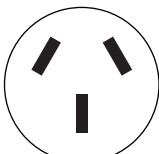

Item	Description	Part number	Qty
1	EPC pneumatics carrier assembly		
2	EPC cage fan	G3450-67002	1
3	Motor, oven fan, DC	G3440-60504	1
4	Ac power board	G3450-61820	1
5	8000W Power supply	G3450-80250	1
6	Washer, steel to attach motor	2190-0712	6
6	Nut with lock washer, M4 to attach motor	0535-0043	3
8	Tiedown	G3450-00034	1
9	AC power inlet assembly (includes power receptacle)		1
<b>Regular oven</b>			
	120 VAC (requires a C19 power cord)	G1530-61550	
	220, 230, 240 VAC (requires a C13 power cord)	G3440-60028	
<b>Fast oven</b>			
	All (200/208/220/230/240 VAC) (requires a C19 power cord)	G1530-61550	



**3 Illustrated Parts Breakdown**  
Power cords

# Power cords


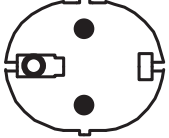
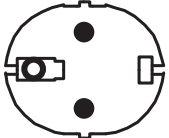
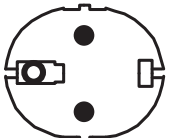
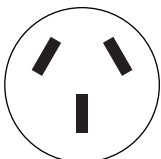
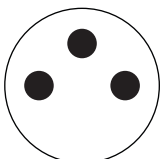
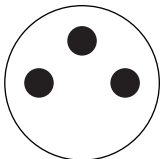
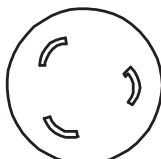

**Table 9 Power cord terminations**

Part number	Country	Voltage	Amps	Cable length (m)	GC connector type	Termination type	Plug
8121-0675	Argentina	240	16	4.5	C19	AS 3112	
8120-1369	Australia, New Zealand	240	10	2.5	C13	AS 3112	
8120-8619	Australia	240	16	2.5	C19	AS 3112	
8121-1787	Brazil	240	16	2.5	C19	IEC 60906-1	
8121-1809	Brazil	240	10	2.5	C13	IEC 60906-1	
8120-6978	Chile	240	10	2.5	C13	CEI 23-16	
8121-0070	China	220	16	2.5	C19	GB 1002	
8121-0723	China	220	10	2.5	C13	GB 1002	
8120-3997	Denmark, Greenland	230	10	2.5	C13	AFSNIT 107-2-01	

### 3 Illustrated Parts Breakdown

#### Power cords

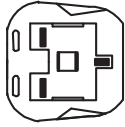
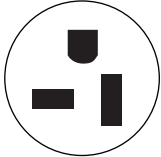
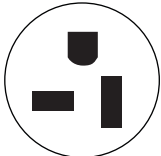
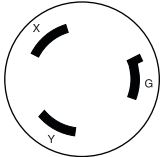
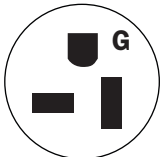
**Table 9 Power cord terminations**

Part number	Country	Voltage	Amps	Cable length (m)	GC connector type	Termination type	Plug
8120-8622	Denmark, Switzerland	230	16	2.5	C19	Swiss/Denmark 1302	
8120-8621	Europe	220 / 230 / 240	16	2.5	C19	CEE/7/V11	
8121-1222	Korea	220 / 230 / 240	16	2.5	C19	CEE/7/V11	
8121-1226	Korea	220 / 230 / 240	10	2.5	C13	CEE/7/V11	
8121-0710	India, South Africa	240	15	2.5	C19	AS 3112	
8120-5182	Israel	230	10	2.5	C13	Israeli SI32	
8120-0161	Israel	230	16, 16 AWG	2.5	C19	Israeli SI32	
8120-6903	Japan	200	20	4.5	C19	NEMA L6-20P	
8120-8620	United Kingdom, Hong Kong, Singapore, Malaysia	240	13	2.5	C19	BS1363/A	

### 3 Illustrated Parts Breakdown

#### Power cords

**Table 9 Power cord terminations**

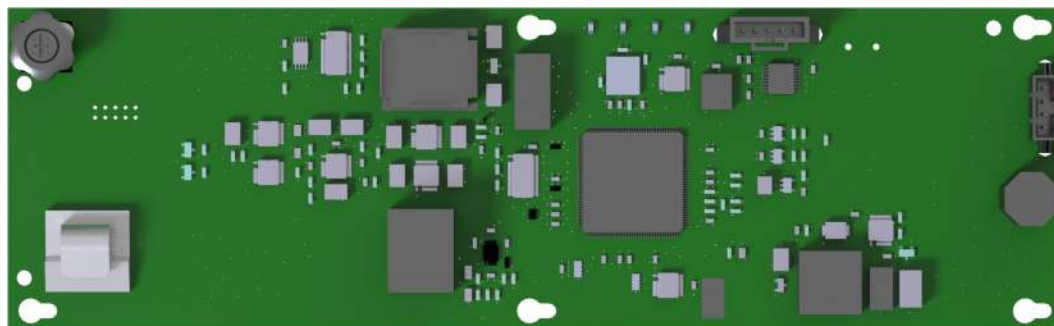
Part number	Country	Voltage	Amps	Cable length (m)	GC connector type	Termination type	Plug
8120-8705	United Kingdom, Hong Kong, Singapore, Malaysia	240	10	2.3	C13	BS1363/A	
8120-6894	United States	120	20	2.5	C19	NEMA 5-20P	
8120-1992	United States	120	13	2.5	C13	NEMA 5-20P	
8121-0075	United States	240	15	2.5	C19	NEMA L6-15P	
8120-6360	Taiwan, South America	120	20	2.5	C19	NEMA 5-20P	
8121-1301	Thailand	220	15	1.8	C19		

### 3 Illustrated Parts Breakdown

Analog input board (G3509A accessory)

## Analog input board (G3509A accessory)

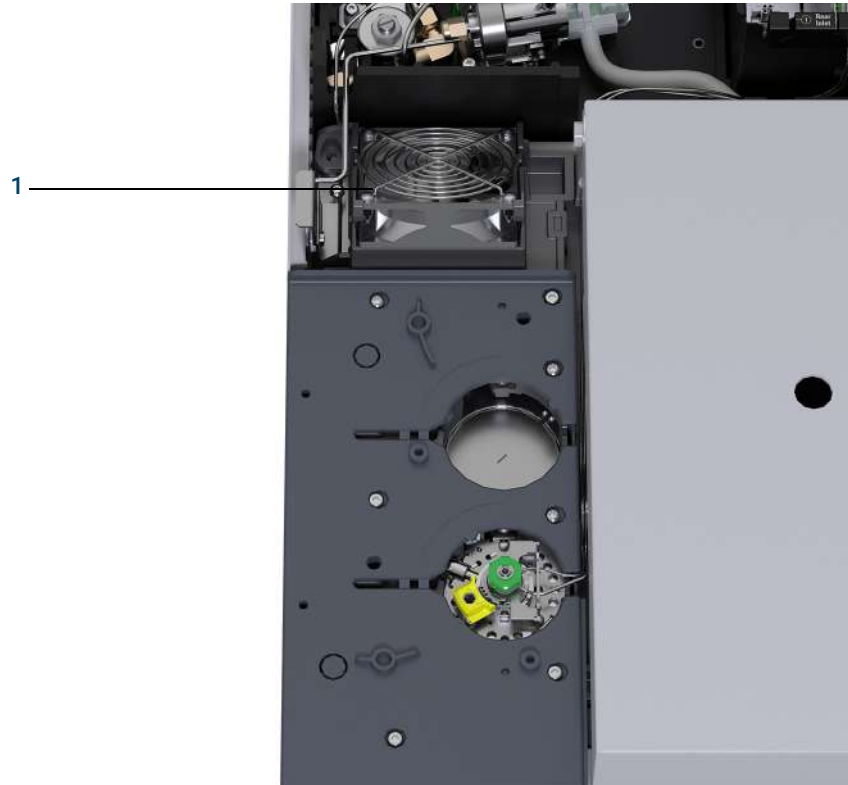
Item	Description	Part number	Qty
1	Analog input board	G4596-61810	1
2	General purpose analog output cable assembly	G1530-60560	1



3 Illustrated Parts Breakdown  
Chassis fans

# Chassis fans

Item	Description	Part number	Qty
1	Inlet fan assembly	G3430-60590	1
2	EPC cage fan	G3450-67002	1



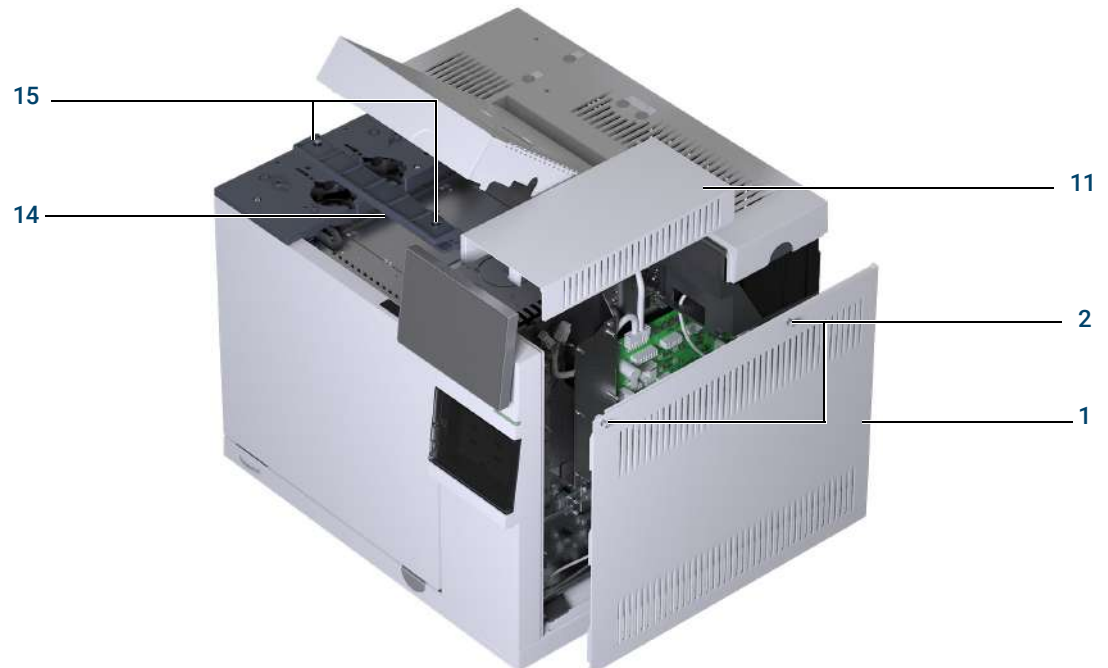
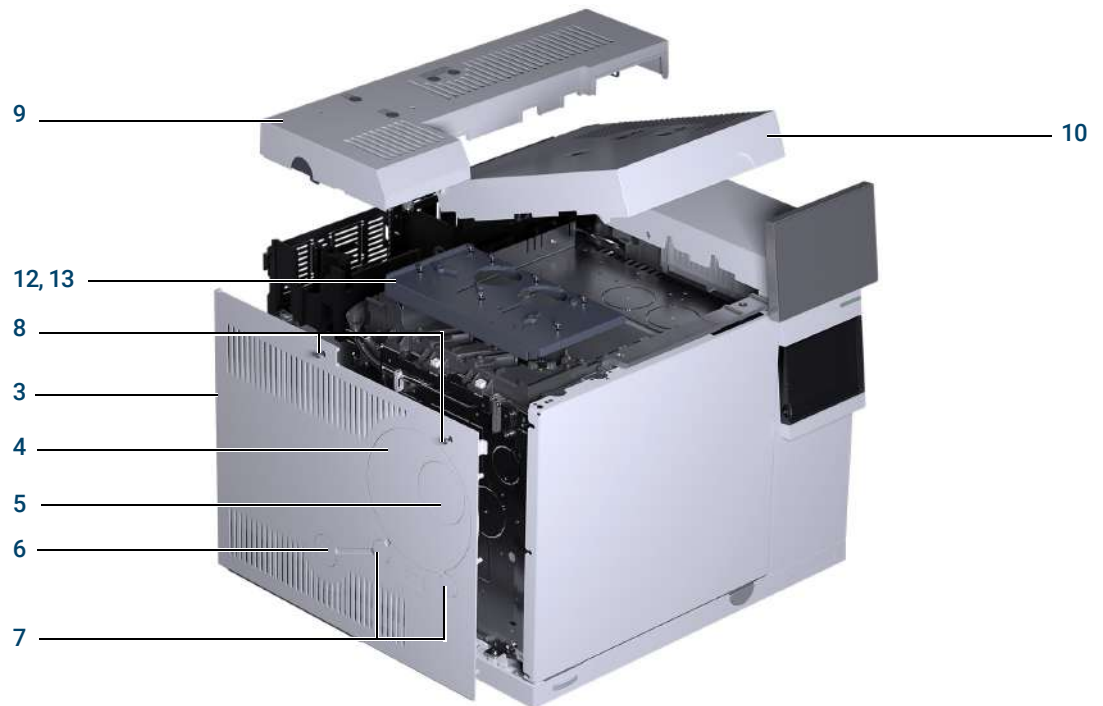
# Covers

## Cover assemblies

Item	Description	Part number	Qty
1	Right side panel	G3450-60012	1
2	Screw, captive, M4 × 12	1390-1023	2
3	Left side panel (including inserts and captive screws)	G3430-60541	1
4	Left side panel large insert	G3430-40024	1
5	Left side panel insert smaller plug	5040-4641	1
6	Left side panel 1.5 in plug	5040-4643	1
7	Left side panel 1.0 in plug	5040-4642	2
8	Screw, captive, M4 × 12	1390-1023	2
9	Pneumatics top cover	G3450-60546	1
10	Detector top cover assembly, removable	G3450-40104	1
	Detector top cover	G3450-40104	1
	Baxter standard detector cover assembly	G3450-60701	1
	Ground strap assembly	19256-60730	1
	Nut, hex with lockwasher, M4 × 0.7	0535-0043	1
	Baxter FPD cover assembly	G3450-60707	1
	FPD single top cover assembly	G3450-81350	1
	FPD dual top cover assembly	G3450-81370	1
	FPD 3rd position detector cover	G3450-81371	1
	XCD burner cover assembly	G3450-60800	1
	Ground strap assembly	19256-60730	1
	Nut, hex with lockwasher, M4 × 0.7	0535-0043	1
	XLSI transfer line detector cover	G3450-20057	1
	Large valve oven cover assembly	G3450-60700	1
	Ground strap assembly	19256-60730	1
	Nut, hex with lockwasher, M4 × 0.7	0535-0043	1
11	Top service panel	G3450-60010	1
	FPD electronic top cover assembly	G3450-80540	1
	Ground strap assembly	19256-60730	1
	Nut, hex with lockwasher, M4 × 0.7	0535-0043	1
	PDHID electronics top cover assembly	G3450-60708	1
	Ground strap assembly	19256-60730	1
	Nut, hex with lockwasher, M4 × 0.7	0535-0043	1
12	Inlet cover assembly	G3430-60540	1
13	Screw, captive M4 × 12 mm	0515-2496	7

**3 Illustrated Parts Breakdown**  
Cover assemblies

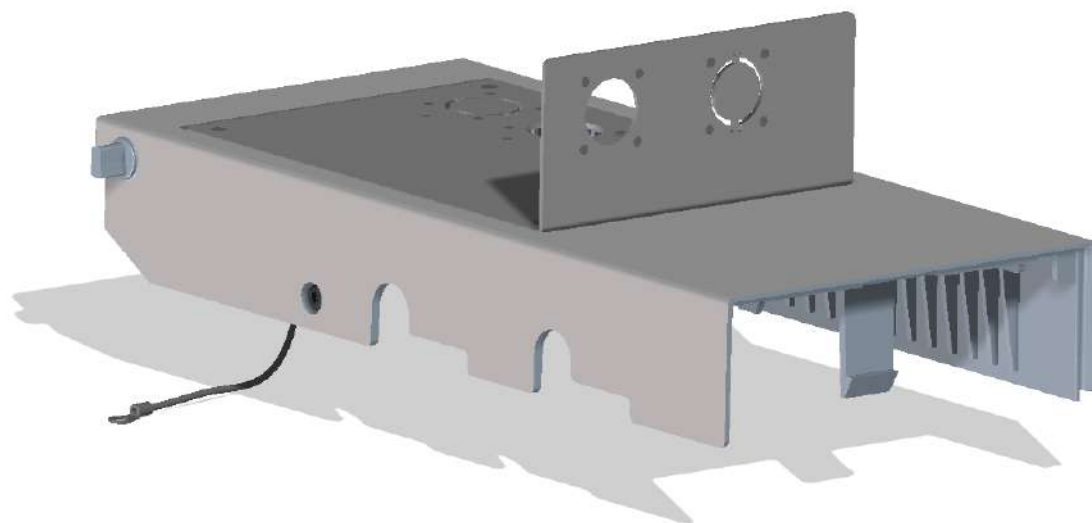
Item	Description	Part number	Qty
14	Detector bezel assembly	G3450-60533	1
15	Screw, captive M4 × 12 mm	1390-1023	2
NS	Detector top cover repair kit - will we have one of these for 8890/8860?	G3430-67648	-





## XCD Detector Cover assemblies

Item	Description	Part number	Qty.
1	XCD back cover assy	G3550-60820	1
2	Top cover for single XCD	G3488-00803	1
3	Top cover for dual XCD	G3488-00804	1
4	Detector front cover	G3488-60802	1
5	LVO single XCD cover plate	G3488-00700	1
6	LVO dual XCD cover plate	G3488-00703	1
7	LVO front cover, XCD	G3450-00701	1
8	Hinge Assembly	G3488-60702	1
9	Screw-machine assembly M4 X 0.7 8mm-LGScrew	G3488-0433	3

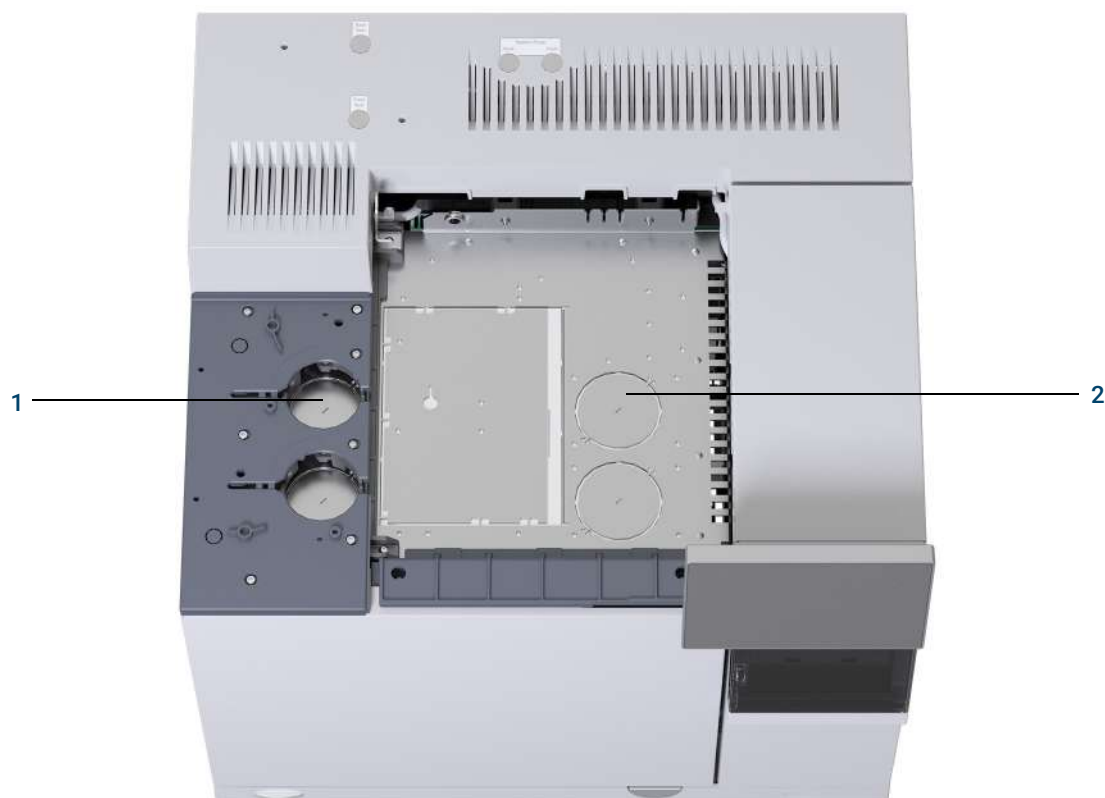


### 3 Illustrated Parts Breakdown

Covers for empty inlet and detector mounting holes

## Covers for empty inlet and detector mounting holes

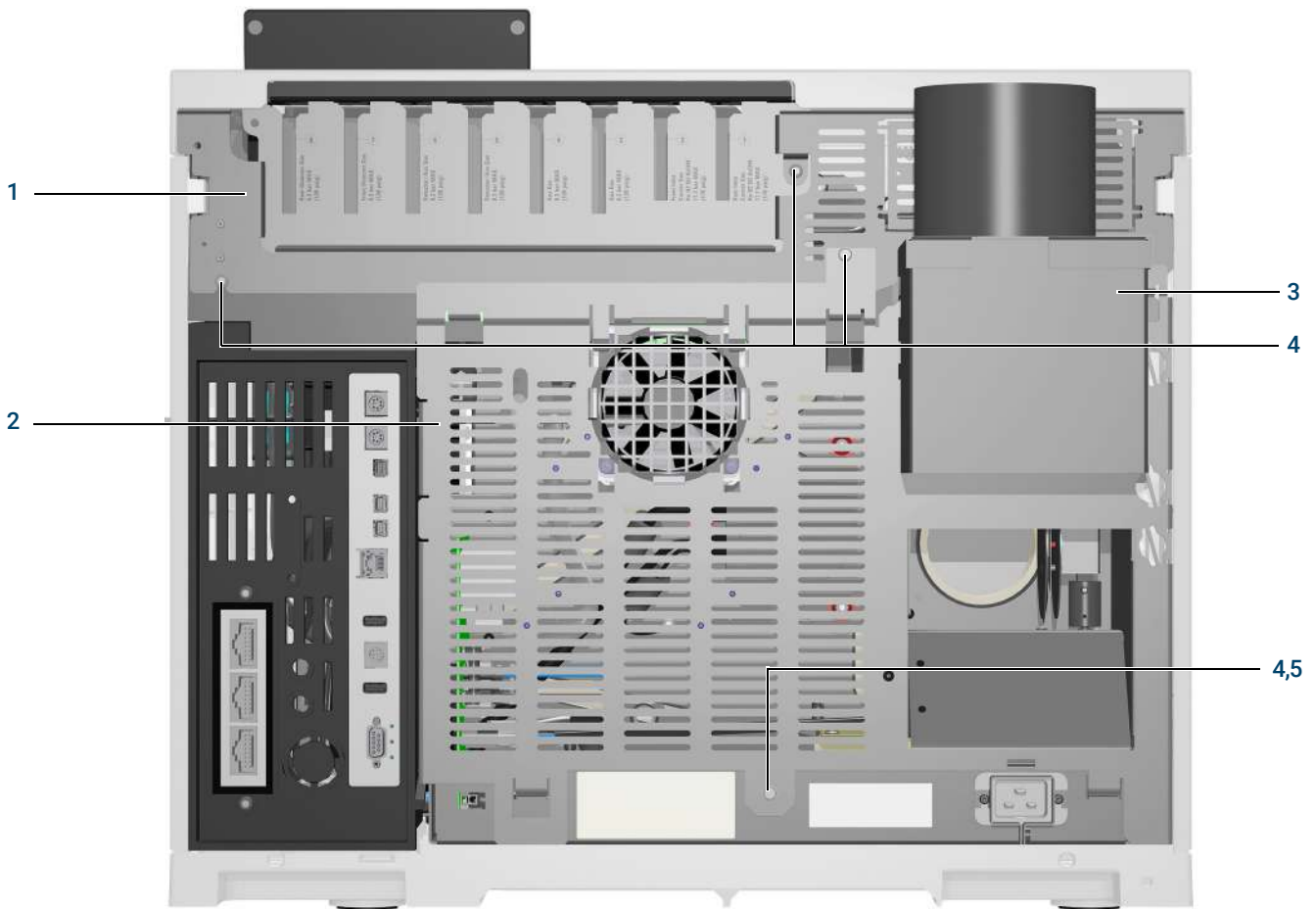
Item	Description	Part number	Qty.
1	Inlet cover, consists of: Metal cover Insulation	G1530-67050 G1530-00460 G1530-00670	1
2	Detector cover, consists of: Metal cover Insulation	G1530-67040	1



**3 Illustrated Parts Breakdown**  
Back covers

## Back covers

Item	Description	Part number	Qty
1	Cover, back upper	G3450-01090	1
2	Cover, back lower	G3450-01023	1
3	Oven exhaust deflector (optional)	G3450-81650	1
4	Screw, M4 × 12 mm, T-20	0515-2496	6
5	Lock washer, No. 8, 0.168 in.		2



### 3 Illustrated Parts Breakdown

Auto-injector mounting and parking posts

## Auto-injector mounting and parking posts

### 7693A ALS, 7650 ALS

Item	Description	Part number	Qty
1	Injector mounting post	G4513-20561	2
2	Parking post, dual purpose	05890-61525	2



### ALS Post Repair Kit

If the threaded portion of the ALS post is broken off in the inlet chassis, order ALS Post repair Kit G3440-67001. The kit contains:

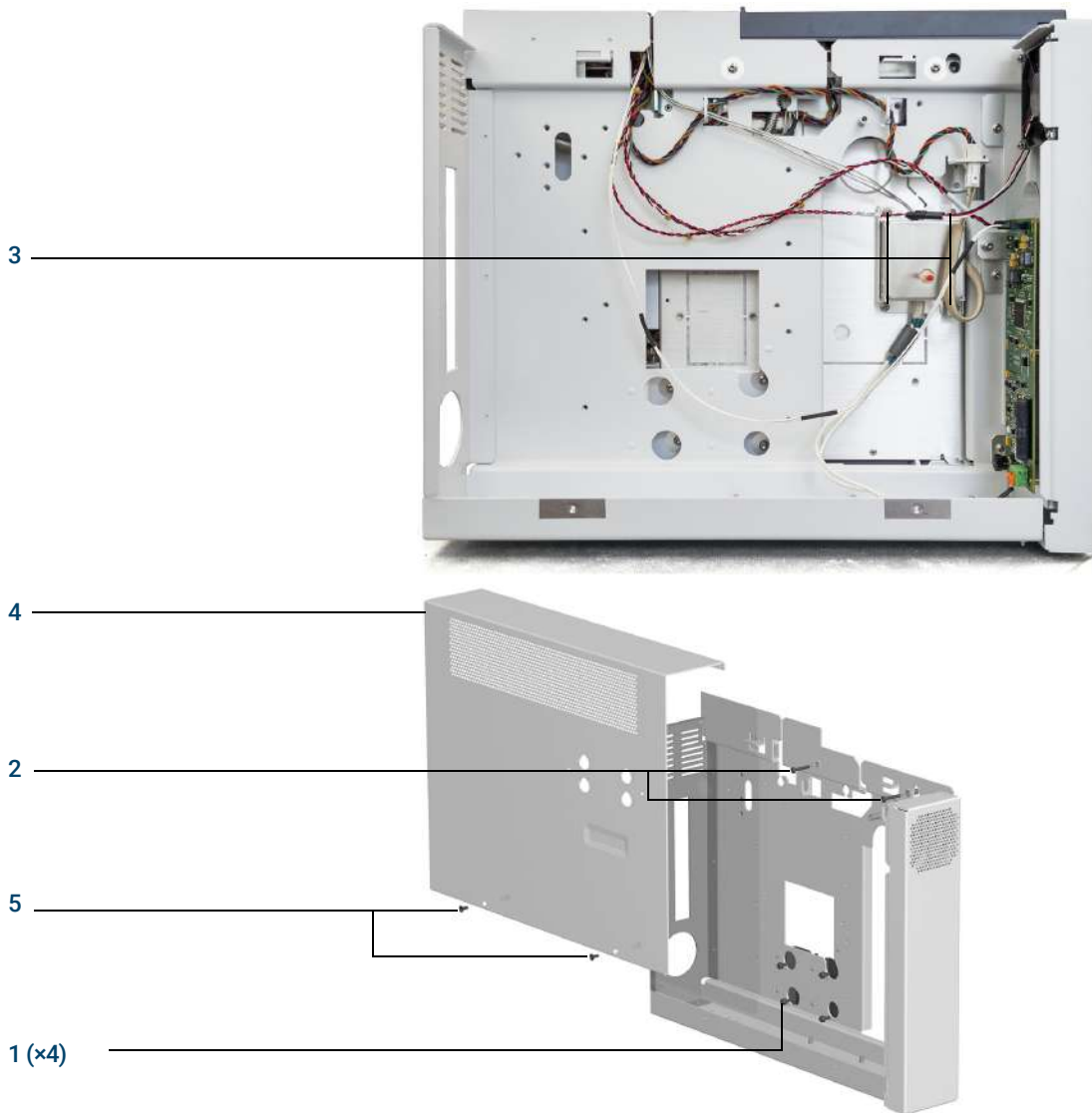
**Table 10 ALS Post Repair Kit contents**

Description	Part number	Qty
Unique 7693 ALS mounting post	G4513-20574	2
Unique injection port cover	G3430-60022	1

The ALS posts in this kit are not compatible with the standard injection port cover. The unique injection port cover in this kit requires the unique ALS mounting posts.

## Auxiliary Side Carrier

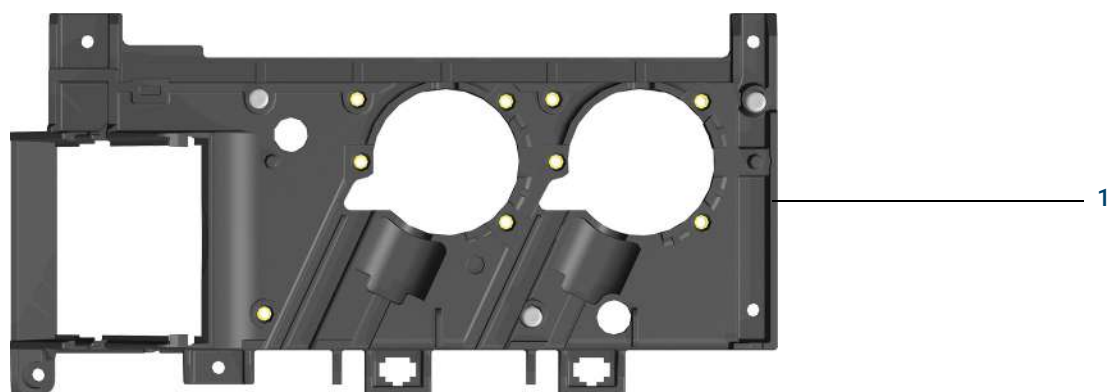
	Description	Part number	Qty
	Auxiliary detector box assembly	G3577-60100	
1	Screw, machine, M4 × 12 mm long	0515-0382	
2	Screw, machine, M4 × 25 mm long	0515-2712	
3	Bulkhead fitting retainer, 316 SST	0100-0137	
4	3rd Detector box cover assembly	G3450-00224	
5	Screw, machine, M4 × 10 mm long	0515-1269	
NS	Blank label plate	G1530-91705	



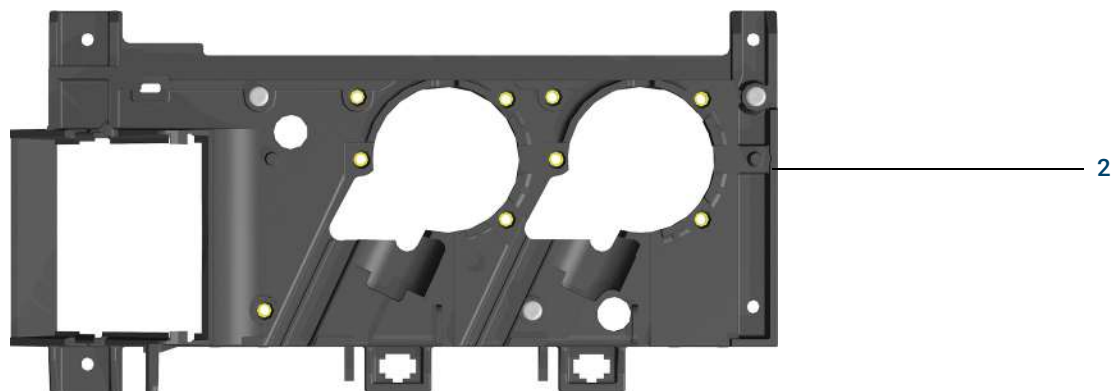
## Mainframe

	Description	Part number	Qty
1	Standard inlet chassis, for SSL, PP, COC, and VI inlets	G3450-40103	1
2	PTV inlet chassis, required for MMI and PTV. (Accepts all inlet types.)	G3430-20108	1

### Standard inlet chassis



### MMI and PTV inlet chassis



# Tools

This section contains parts not applicable to other sections.

## Shipping Crates

Description	Part number	Where used
MS shipping crate	G2589-63001	for 5973 MSD
MS shipping crate	G3170-80000	for 5975 MSD
MS shipping crate	G3870-80100	for 5977 MSD
Packaging Kit for G4513A Injector	G4513-60810	for G4513A Injector
Packaging Kit for G4514A Tray	G4514-60810	for G4514A Tray

Note: MS shipping crates include the wooden pallet, cardboard carton, polyethylene bag, and protective foam. They do not include transfer line packing, straps, or packing for a rough pump.

## Hand tools

We assume you have a well-equipped toolbox, but some of the special tools listed here will be helpful.

**Table 11 8890 Series GC tool bag, 5182-3456**

Description	Part no.
Wrench, 1/4-inch to 5/16-inch	8710-0510
Wrench, open-end, 7/16-inch and 9/16-inch	8710-0803
Wrench, open-end, 1/2-inch and 7/16-inch	8710-0806
Wrench, open-end, 7/16-inch and 3/8-inch	8710-0972
Driver, nut, 7-mm	8710-1217
Cutter, tube	8710-1709
Screwdriver, Torx T-20	8710-1615
Screwdriver, Torx T-10	8710-1623
Tool bag	9222-3253
Tool, ferrule, .25-.32 mm, 2 × 3 × 3/4-inch	RFT-2500
Tool, ferrule, .53 mm	RFT-5300
Lens, magnifying	G2855-40001
Septum tool, knurled handle	450-1000

### 3 Illustrated Parts Breakdown

Hand tools



#### Drivers

- T-20 Torx Driver — 5182-3465
- T-20 Torx Key (for close-quarters work) — 8710-1807
- T-10 Torx Driver — 5182-3466
- T-10 Torx Key (for close-quarters work) — 8710-2140
- T-8 Torx driver (for large valves in a Large Valve Oven) — 8710-2509), or hex key, 2-mm
- #1 Pozidriv screwdriver — 8710-0899



### 3 Illustrated Parts Breakdown

#### Hand tools

- #2 Pozidriv screwdriver – 8710-0900
- Flat-blade screwdriver – 8730-0008
- 1/4-inch Nut Driver – 8710-1561 (FID Jets)
- 7-mm Nut Driver – 8710-1217

#### Wrenches

- Wrench, 1/4-inch to 5/16-inch – 8710-0510
- Wrench, open-end, 7/16-inch and 9/16-inch – 8710-0803
- Wrench, open-end, 1/2-inch and 7/16-inch – 8710-0806
- Wrench, open-end, 7/16-inch and 3/8-inch – 8710-0972
- Wrench, adjustable, 12-inch – 8710-1712
- Wrench, open-end, 3/16-inch × 1/4-inch – 8710-2618
- Wrench, open-end, 9/16-inch × 5/8-inch – 8720-0010
- Wrench, 7-mm × 8-mm – 1340407010
- Wrench, 6-mm × 7-mm – 1340407011
- Wrench, 8-mm × 10-mm – 1340407012
- Wrench, 6-mm × 6-mm – 8710-2156
- Wrench, 5-mm × 5-mm – 8710-2157

#### Cutters/Crimpers/Strippers

- Diagonal Cutters
- Crimper/Wire Strippers
- Tubing Cutters
  - Restek #20193 <http://www.restekcorp.com>
  - Agilent 8710-1709
  - Agilent precision tubing cutter for 1/16-in. SS tubing 5190-1442
  - Alternate for Europe:

HICHROM Ltd - Part No: HI-196

Description: Tubing Cutters - Price: £17.00

#### Pliers

- Channel lock pliers
- Slip-joint pliers
- Needle nose pliers
- Agilent needle nose pliers – 8710-0004
- Agilent Truarc pliers – 8710-0018

## Specialized tools for GC support



- FID Flow Tool – 19301-60660
- FID Cleaning Kit – 9301-0985, (.010-inch Guitar String)
- Injection Port Cleaning Kit – 480-0003
- 12 Piece File Kit – RSF-1200
- (Ferrule Removal tool, not shown – 440-1000)
- Fiberglass Tape – 0460-0186
- PTFE Tape – 0460-0016

### 3 Illustrated Parts Breakdown

#### Specialized tools for GC support

- White Gloves – 8650-0030



- NPT Adapter – 0100-0118
- 5/16-inch by #20 Thread Chaser (Die), to clean 1/8-inch Swagelok threads – Other Supplier
- On/Off Valve, 1/8-inch Ball Valve – 0100-2144
- Exacto Knife
- Metric (8710-0641) and English Allen Wrench – Hex Keys
- Pin Vise and small drill bit
- Tweezers – 8710-0007
- Micro Probes (Sharp Object) – RMP-5005 – Qty 5
- Inspection Mirror – 707-0027
- 1.25-inch socket and ratchet for removing FID brass retaining nut
- Column cutter wafer, 4/pk – 5181-8836
- 6890 inlet wrench – 19251-00100
- 7890 inlet wrench (for SSL and MMI) – G3452-20512



## Electronic tools for GC support



- Digital Multimeter – (Agilent U1231A True RMS shown)
- Power Outlet Test Tool (Radio Shack/Sears/Electrical Supply)
- Static Strap – 9300-0969 (small) or 9300-0970 (large), 5 ft cord/clip – 9300-0980
- Wrist strap, disposable, 4-LG 1-W – 9300-1408
- Various jumpers and clip leads – electronic supply
- ESD mat – 9300-1484
- Useful Cables – not shown:
  - Crossover LAN Cable – 5183-4649
  - 9 Pin RS-232 Null Modem Cable – G1530-60600
  - USB/RS-232 adapter cable – 8121-1013
- Sensor pin extractor – 8710-1542



3 Illustrated Parts Breakdown  
Pneumatic tools for GC support

# Pneumatic tools for GC support



### 3 Illustrated Parts Breakdown

Pneumatic tools for GC support



- Electronic Leak Detector
  - G3388B (or G3388A)
  - 5182-9646, 120 VAC
  - 5182-9648, 220 VAC (Agilent)
- Rotameter, Porter Model 65
  - Tube 1: 10-70 cc/min He, Tube 2: 85–850 cc/min Air
  - [http://www.porterinstrument.com/indust\\_21.php](http://www.porterinstrument.com/indust_21.php)
- Electronic Flow Meter
  - Preferred flow meter: Precision gas flow meter, flow range 5–500 mL/min — 5067-0223



- ADM 1000 — 220-1170
- ADM 2000 — 220-1171-U (Mass Flow Version)
- Electronic "Mass" Flow Meter – Flow Tracker
  - Model 1000 Flow Only — 5183-4779
  - Model 2000 with Leak Detector — 5183-4780
  - Universal Power Adapter — 5183-4781
- White Silicone Tubing:
  - 4 meters — 701-0016
  - 7 cm — 220-1179
- PTFE tubing, 1/8-inch, 1 m long — G1290-80050

#### For Checking Inlet Pressure

- Quality Analog Pressure Gauge (0-100 or 0-60 PSIG) adapted with a Headspace Probe (301-013-HSP) – need NPT adapter – 0100-0118 and TCD Ferrules Set – 5180-4103, 5182-9673, 5182-3477

### 3 Illustrated Parts Breakdown

Pneumatic tools for GC support

- Digital Pressure Gauge (0-100 PSIG) – Omega – Model HHP-201 Adapted with 1/8-inch NPT adapter 0100-0111, SS Capillary 5021-1831, Reducing Ferrule – 0100-1342 and 530  $\mu$ m Column Ferrule – 5080-8773



NPD Flow adapter - G1534-60640



G1530-20610 - FID/NPD Jet Plug



"No-Hole" Column Ferrules – 5181-7458

**3 Illustrated Parts Breakdown**  
Pneumatic tools for GC support



FID Flow adapter - 19301-60660



5060-9055 uECD/TCD Detector Plug



Plastic 1/8-inch Swagelok Cap – P/N 0100-2414 Qty 3

Replacement Septum Purge Fitting for EPC Module – P/N G2630-61720 (Not included in kit)



Blanking plug, finger tight, 5020-8294. (Can be used with any ferrule to duplicate using a no-hole ferrule.)





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G2790-90020



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