
Electrospray Spray Chamber,	2
Electrospray Nebulizer,	4
APCI Spray Chamber,	6
APCI Nebulizer,	8
Desolvation Assembly,	10
Analyzer Overview,	10
Mass Filter,	12
Ion Optics and Octopole,	12
Vacuum System,	14
Vacuum Chamber and Feedthroughs,	16
Foreline Pump,	18
Sample Introduction System,	20
Gas Flow Control Module,	22
External Connectors and Fittings,	24
Covers,	26
Electronic Boards and Cables,	27
Shipping Kit,	29
Consumables and Supplies,	31
Tools,	33

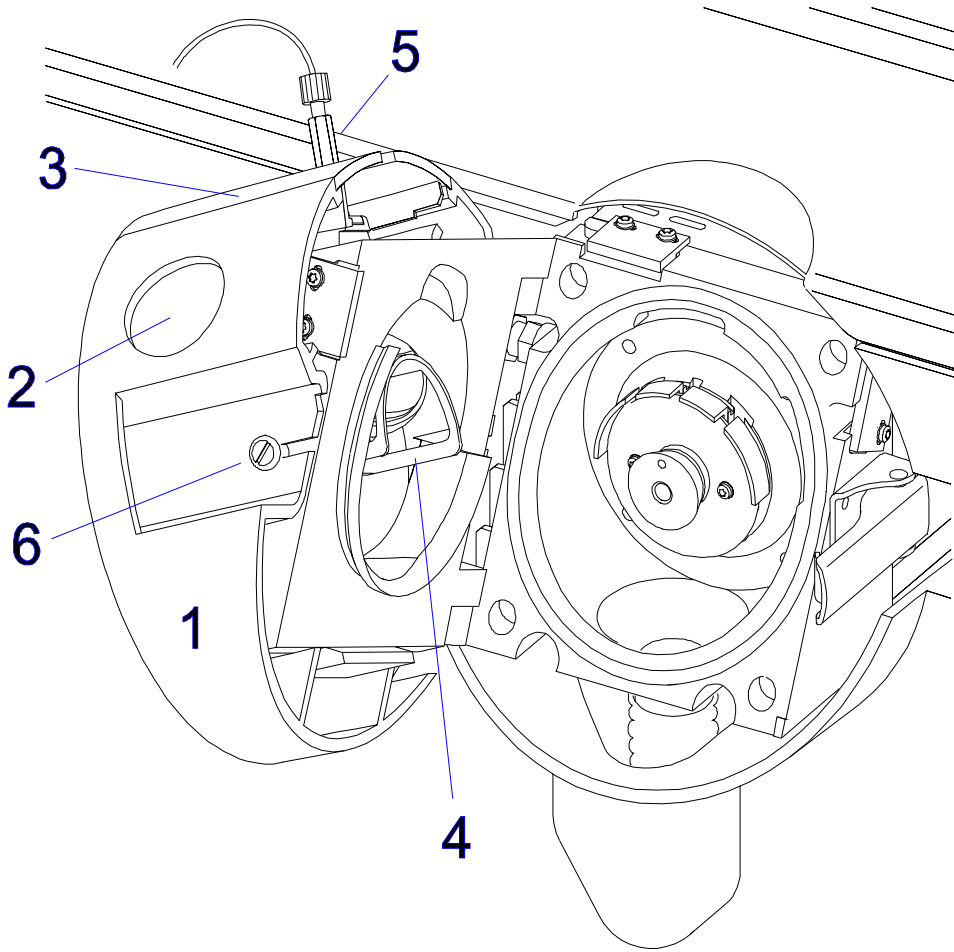
HP 1946A LC/MSD Replacement Parts

To see parts lists and drawings, set up the Acrobat View menu to **Fit Visible** and **Continuous - Facing Page**.
To report errors, please send email to chem@sid.hp.com.

Electrospray Spray Chamber**Electrospray Spray Chamber**

Item	Description	Part Number
1	Spray chamber cover	G1946-40033
2	Spray chamber window	G1946-20159
3	Nebulizer cover	G1946-40034
4	Mesh electrode	G1946-60027
5	ES Nebulizer assembly	G1946-60098
6	Screw, M3 x 0.5 x 8 T10	0515-0372*
7	Screw, M4 x 0.7 PH	0515-0380*
8	Screw, M4 x 0.7 x 12 FH	0515-0943*
9	Screw, M4 x 16	0515-1034
10	Screw, M3 x 0.5 FH	0515-1103*
11	Shoulder screw, metric (attaches nebulizer to spray chamber)	0515-2880
	Gasket for spray chamber window	G1946-20189
	Latch post	G1946-20196
	Screw to hold latch post	0515-1034
	Vented standoff for mesh electrode	G1946-20163

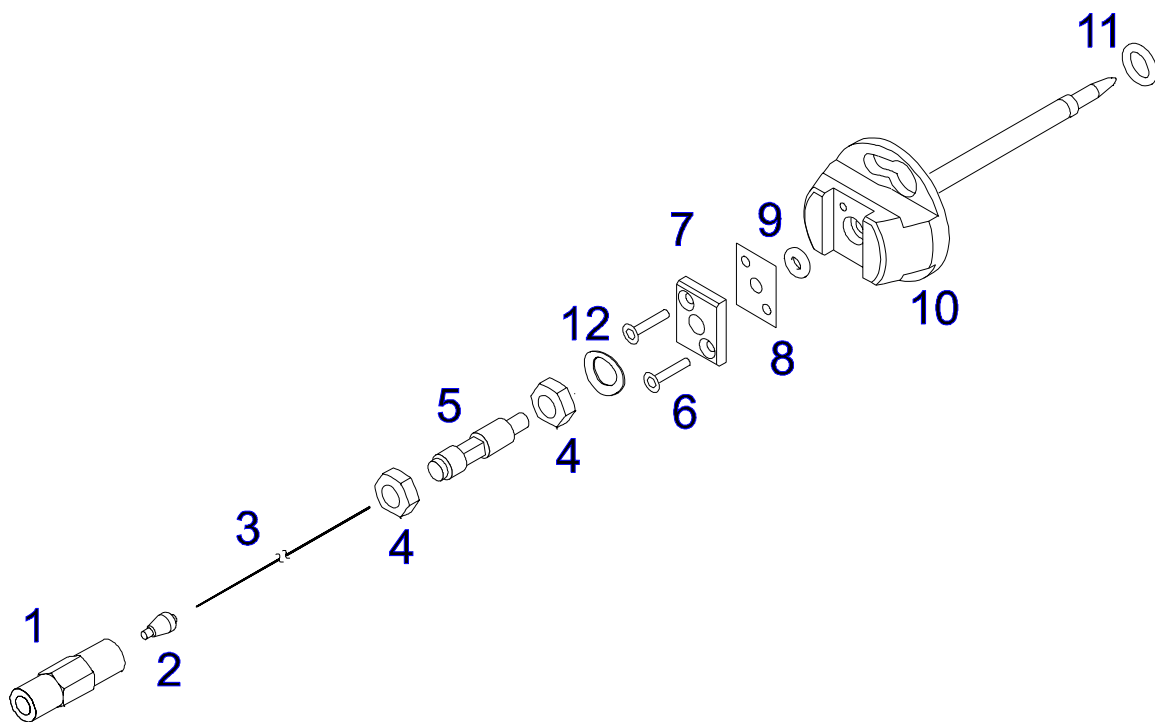
Items marked with a (*) are not identified on the diagram



Electrospray Nebulizer**Electrospray Nebulizer**

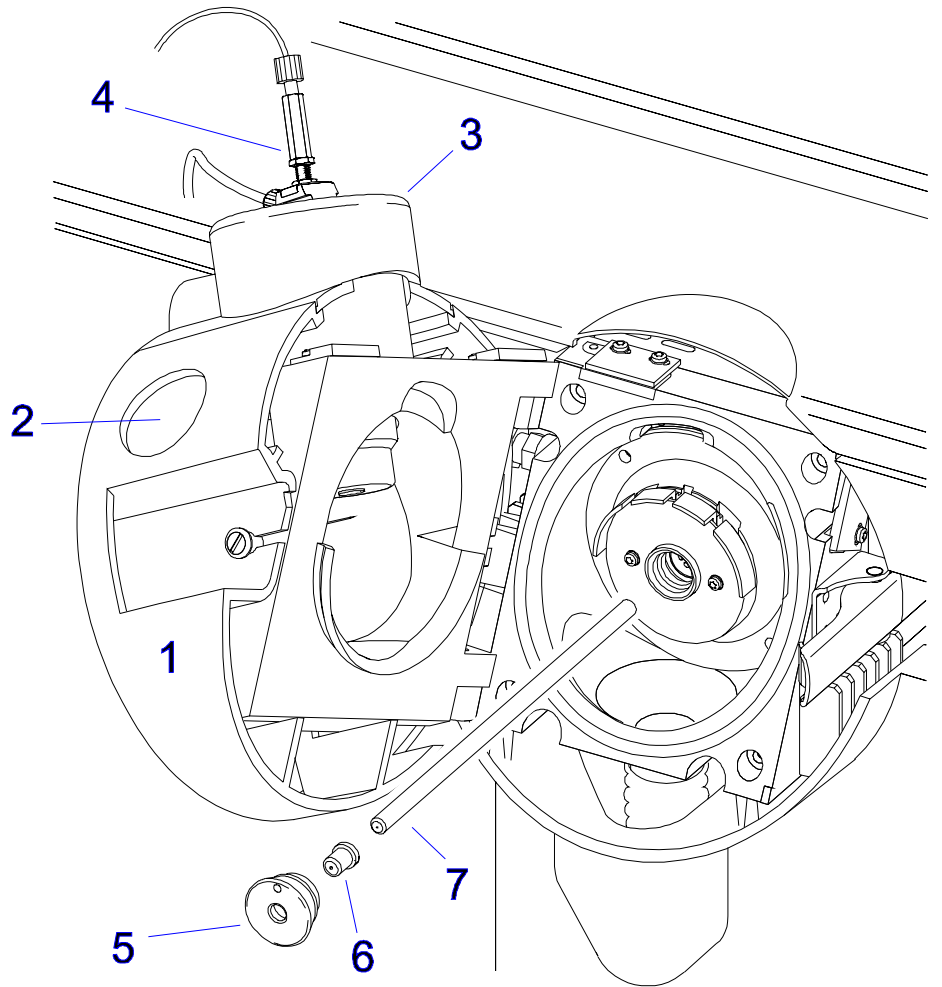
Item	Description	Part Number
1	Union, zero dead volume	0100-1619
2	Ferrule, 0.010	G1946-20213
3	ES needle	G1946-20177
4	Hex nut	2740-0001
5	Needle holder	G1946-20174
6	Screw, M2 x 0.4	0515-1602
7	Square Nut	G1946-20175
8	O-ring retainer	G1946-20202
9	O-ring, 2-005	0905-0082
10	ES nebulizer body	*
11	O-ring, 2-009	0905-1022

Cannot be ordered separately, order complete ES nebulizer assembly



APCI Spray Chamber**APCI Spray Chamber**

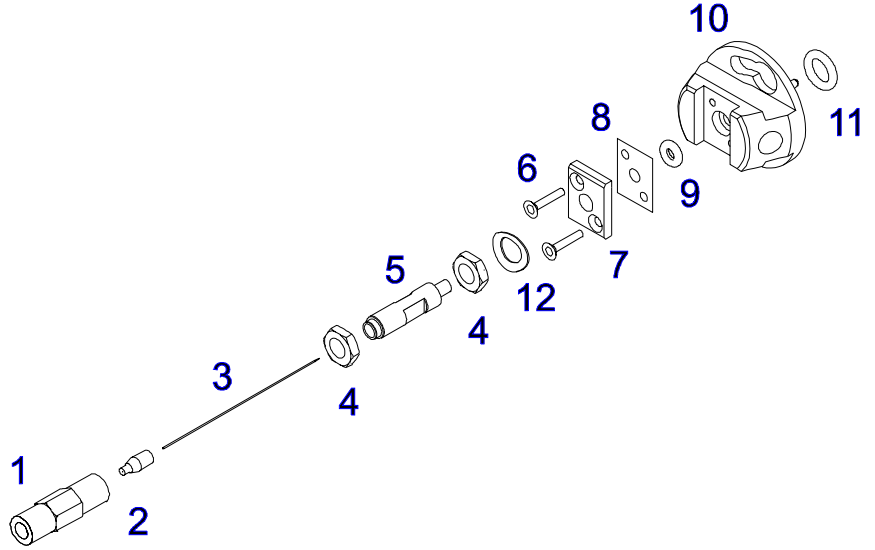
Item	Description	Part Number
1	Spray chamber cover	G1946-20185
2	Spray chamber window	G1946-20159
3	Nebulizer cover	G1946-40035
4	APCI Nebulizer assembly	G1946-60037
5	Spray shield	G1946-20157
6	Capillary cap	G1946-20056
7	Capillary	G1946-80009
8	Corona needle (pack of three)	9301-1397
9	Corona needle receptacle / cable assembly	G1947-60102*
10	Vaporizer heater/sensor/cable	G1947-60101*
11	Screw, M3 x 0.5 x 8 T10	0515-0372*
12	Screw, M4 x 0.7 PH	0515-0380
13	Screw, M4 x 0.7 x 12	0515-0943
14	Screw, M4 x 16	0515-1034
15	Screw, M3 x 0.5 FH	0515-1103
16	Shoulder screw, metric (attaches nebulizer to spray chamber)	0515-2880
17	Vaporizer O-ring	0905-1292*
18	Gasket for spray chamber window	G1946-20189
19	Latch post	G1946-20196
20	Screw to hold latch post	0515-1034



PCI Nebulizer

APCI Nebulizer

Item	Description	Part Number
1	Union, zero dead volume	0100-1619
2	Ferrule, 0.010	G1946-20213
3	APCI needle	G1946-20097
4	Hex nut	2740-0001
5	Needle holder	G1946-20174
6	Screw, M2 x 0.4	0515-1602
7	Square Nut	G1946-20175
8	O-ring retainer	G1946-20202
9	O-ring, 2-005	0905-0082
10	APCI nebulizer body	*
11	O-ring, 2-009	0905-1022
	Cannot be ordered separately, order complete APCI nebulizer assembly	



Analyzer Overview

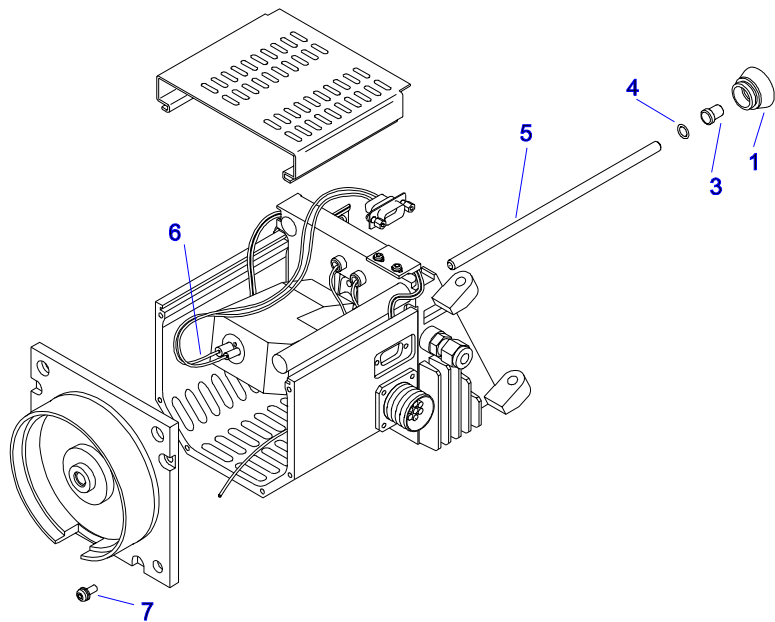
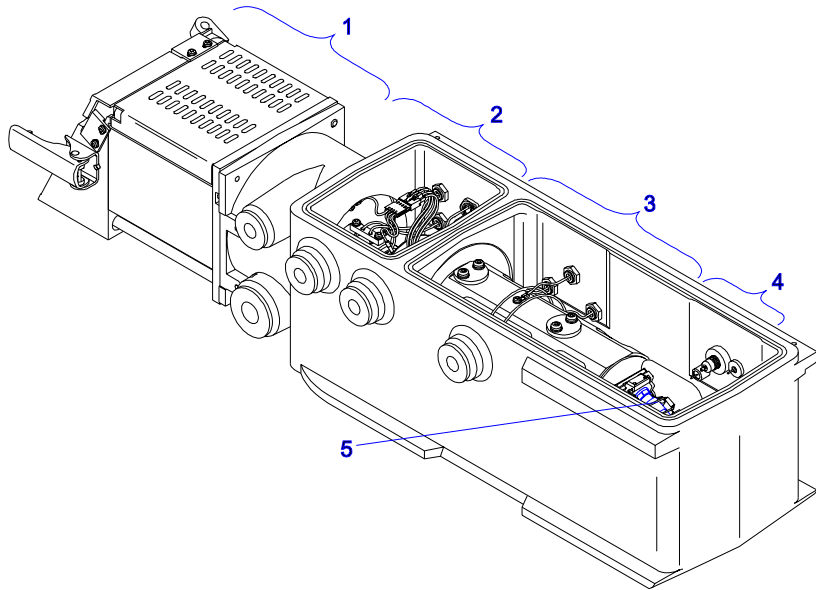
Item	Description	Part Number
1	Desolvation assembly	N/A
2	Octopole / ion optics	G1946-60041
3	Mass filter assembly	N/A
4	Detector assembly	G1946-80019
5	Electron multiplier horn	05971-80103
6	Detector lead kit	G1946-60134 *

Items marked with a (*) are not identified on the diagram.

Desolvation Assembly

Item	Description	Part Number
1	Spray shield	G1946-20157
2	End plate	G1946-20156*
3	Capillary cap	G1946-20056
4	Spring, canted coil	1460-2571
5	Capillary	G1946-80009
6	Drying gas heater / cable	G1946-60047
7	Screw, M4 x 0.7 PH	0515-0380
	Hex standoff for cable	0380-1858*

Items marked with a (*) are not identified on the diagram.



Ion Optics and Octopole

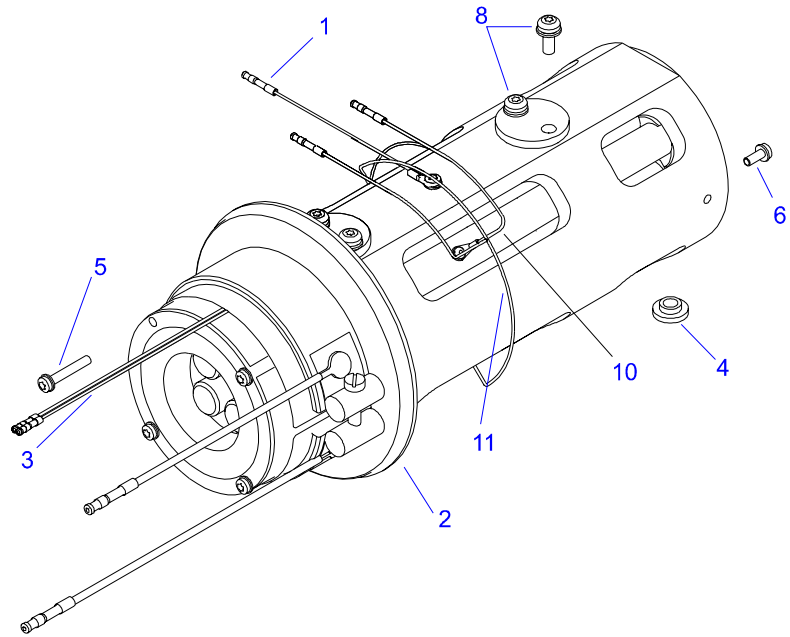
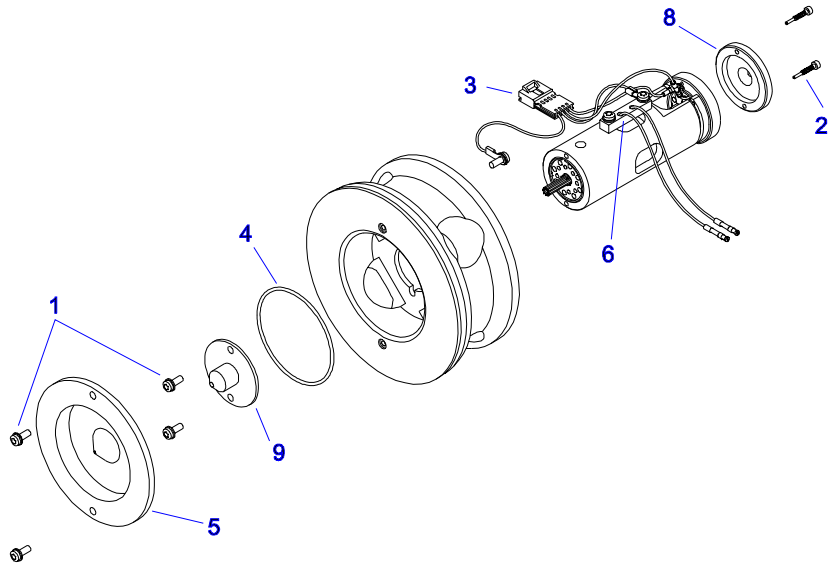
Item	Description	Part Number
1	Screw, M3 x 0.5 x 8 T10	0515-0372
2	Screw, pin	G1946-20211
3	Octopole cable	G1946-60080
4	O-ring, 2-033	0905-1471
5	Skimmer 1	G1946-20089
6	Strain relief block	G1946-20172
7	Lens 1	G1946-20029*
8	Lens 2	G1946-20030
9	Skimmer 2	G1946-20087
10	Lens spacer	G1946-20143
	Octopole assembly	G1946-60041

Items marked with a (*) are not visible on the diagram.

Mass Filter

Item	Description	Part Number
1	Quad grounding cable	G1946-60091
2	Quad tube support	G1946-20034
3	Temperature sensor	G1946-60132
4	Base washer	G1946-20043
5	Screw, M3 x .5 x 20 T10	0515-1410
6	Screw, M3 x .5 x 8 T10	0515-0372
7	Quad heater assembly	G1946-60099
8	Screw, M4 x 10 T10	0515-0380
10	Quad bridge, downstream	G1946-60095
11	Quad bridge, upstream	G1946-60142
12	O-ring, quad support (inner)	0905-1478*
13	O-ring, quad support (outer)	0905-1470*

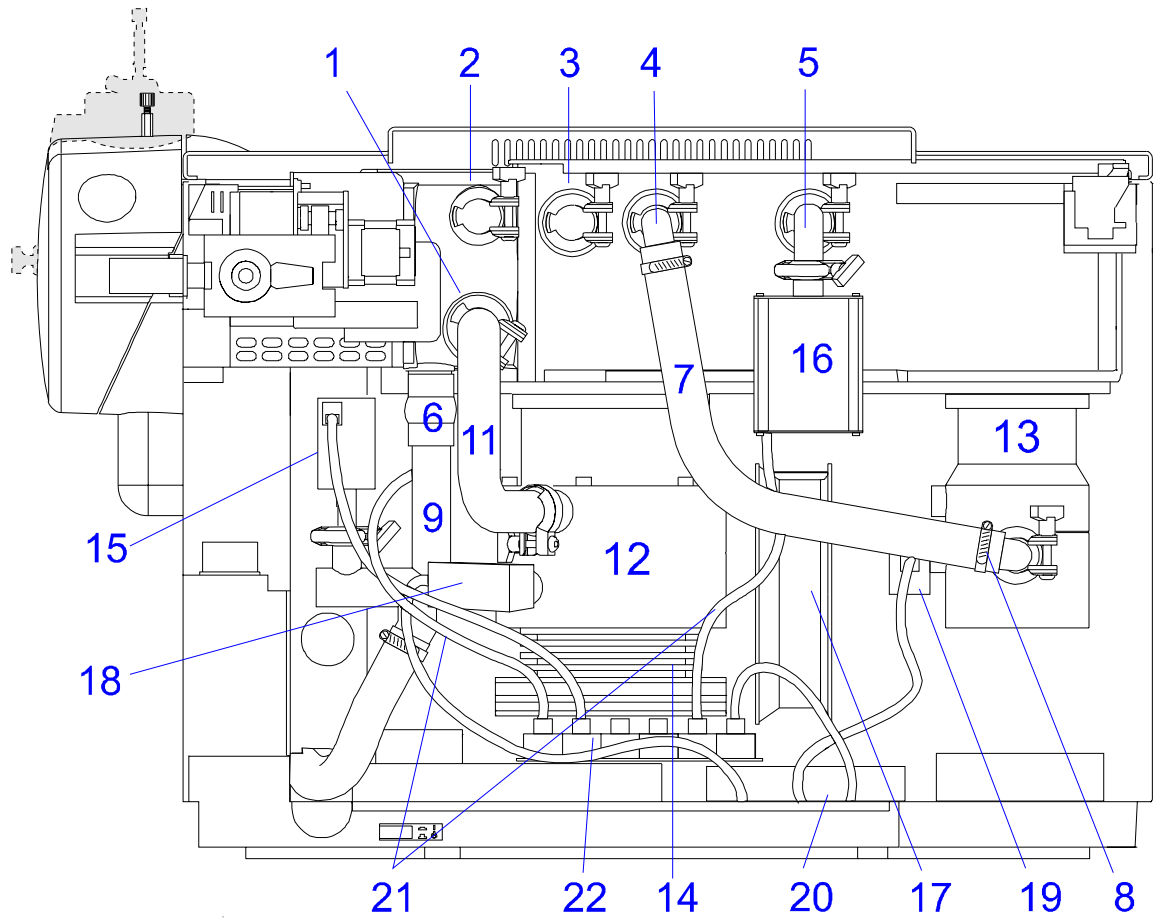
Items marked with a (*) are not identified on the diagram.



Vacuum System

Item	Description	Part Number
1	KF25 clamp & KF25 coseal	0100-0549 0100-1597
2	KF16/10 clamp & KF16 coseal	0100-1397 0100-1688
3	KF16 blank flange	0100-1691
4	KF16 90 degree elbow	0100-1848
5	Dual KF16 elbow	0100-1687
6	KF25 black coupling (rubber coupling)	0100-1692
7	Tubing, Turbo 2 outlet	0890-1942
8	Hose clamp	1400-1234
9	Stage 1 plumbing weldment	G1946-20158
10	Foreline hose assembly	G1946-60032
11	Flexible metal hose	0890-1841
12	Turbo pump, left (Turbo 1)	G1946-80001
13	Turbo pump, right (Turbo 2)	G1946-80002
14	Turbo pump heat sink	G1946-20149
15	Foreline gauge	G1946-80004
16	Triode (high-vacuum) gauge	G1946-80005
17	Turbo pump fan	G1946-80027
18	Turbo controller, left (EXDC 160)	G1946-80036
19	Turbo controller, right (EXDC 80)	G1946-80035
20	LON (turbo) junction box	G1946-80007
21	LON cable kit	G1946-60065
22	LON interface board	G1946-60013
23	Screw M4 x 0.7	0515-0383*
24	Screw M5 x .8 x 12 T25	0515-0387*
25	Screw M8 x 1.25 x 25 hex	0515-2540*
26	Nut, M10 x 1.5	0535-0047*

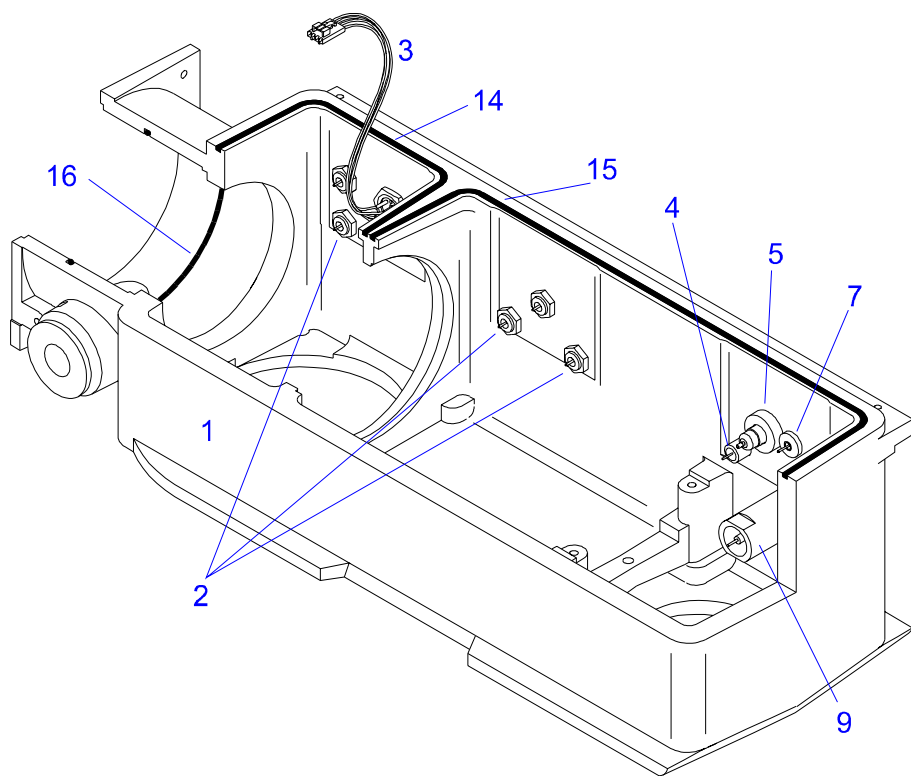
Items marked with a (*) are not visible on the diagram.



Vacuum Chamber and Feedthroughs

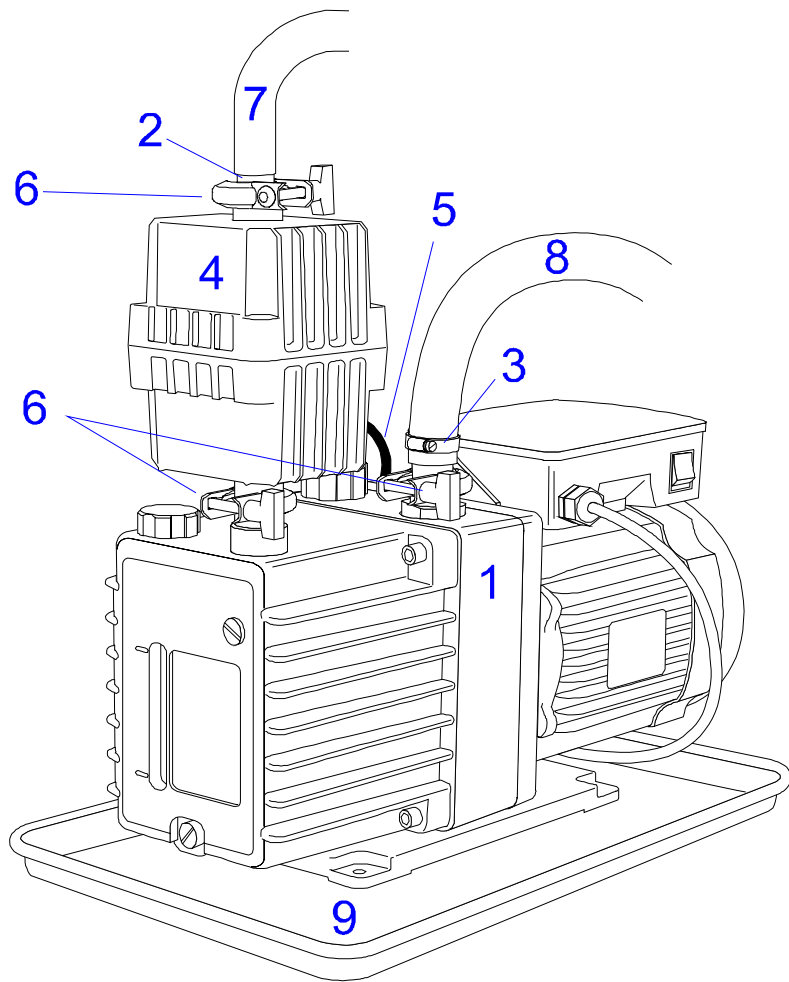
Item	Description	Part Number
1	Vacuum chamber	G1946-20050
2	Feedthrough, 15 KV	G1946-80013
3	Low voltage lens feedthrough / cable	G1946-60070
4	SMB (for iris voltage) feedthrough	G1946-80031
5	Midgi (CDEM voltage) feedthrough	0905-1477
6	Midgi FT nut	0535-0047*
7	HED feedthrough	G1099-80012
8	HED FT nut, 11/16-inch hex	G1946-20173*
9	Signal amp feedthrough	G1946-80030
10	Signal amp FT O-ring	0905-0849*
11	Signal amp FT nut	G1946-20179*
12	Signal amp FT insulator	G1946-20180*
13	Signal amp FT shield	G1946-20181*
14	Left vacuum chamber O-ring	0905-1466
15	Right vacuum chamber O-ring	0905-1469
16	O-ring, ATM / Stage 1 and Stage 1 / Stage 2	0905-1467
17	Vacuum chamber cover	G1946-20036*
18	Bal seal, for chamber cover	3050-1939*
19	Thumbscrew for chamber cover*	0515-2887*

Items marked with a (*) are not identified on the diagram.



Foreline Pump

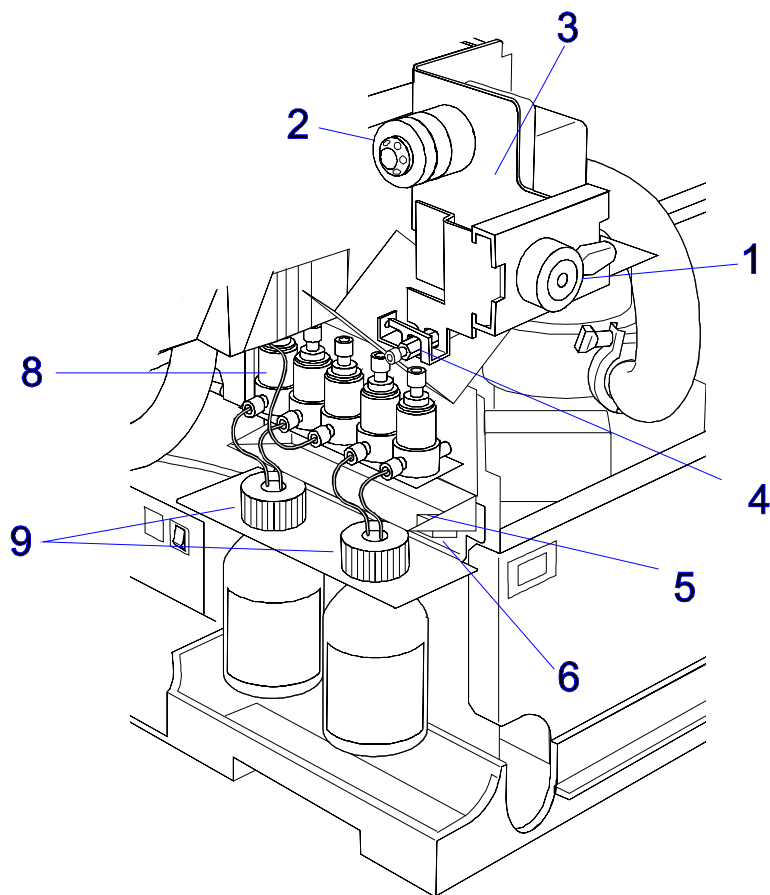
Item	Description	Part Number
	Foreline pump, 200V 50/60 Hz or	G1946-89006
	Foreline pump, 230V 50/60 Hz	G1946-89041
2	Foreline exhaust adapter	59980-20134
3	Hose clamp	1400-0563
4	Oil mist filter	3162-1056
5	Oil return line	3162-1057
6	KF25 clamp and	0100-0549
	KF25 coseal	0100-1597
7	Exhaust tubing	0890-1727
8	Foreline hose assembly	G1946-60032
9	Pump oil drip pan	G1946-00034



Sample Introduction System

Item	Description	Part Number
1	Manual injection valve (optional)	0101-0941
2	4-way selection valve	0101-0920
3	Selection valve bracket	G1946-00022
4	Inlet union w/fittings (and 10-micron frit)	0101-0949
5	Leak sensor, short (leak sensor)	G1946-60140
6	Leak sensor, long (reference sensor)	G1946-60139
8	CDS valves	G1946-60085
9	CDS bottle cap assembly	G1946-60076
	Replacement rotor seal	0100-1855*
	Ferrule, 1/16-inch (CDS waste)	0100-1512*
	Fitting, ferrule (CDS PEEK)	0100-1690*
	Cross Fitting, 1/4-inch (LC/MSD waste tubing)	0101-0950*
	Hose Fitting, 1/4-inch (LC/MSD waste tubing)	0101-0952*
	Tubing, Flex 1/4-inch id (LC/MSD waste tubing)	0890-1711 *
	PEEK tubing assembly (LC/MSD waste tubing)	G1946-60153*
	Waste line assembly (LC/MSD waste tubing)	G1946-60152*
	Nut, medium, 1/16-inch	0100-0968*
	Nut, short, 1/16-inch	0100-1913*
	Ferrule, 1/16-inch for both types of valve nuts	0100-1912*
	Hose Extension Kit LC/MSD source exhaust	G1946-67002*

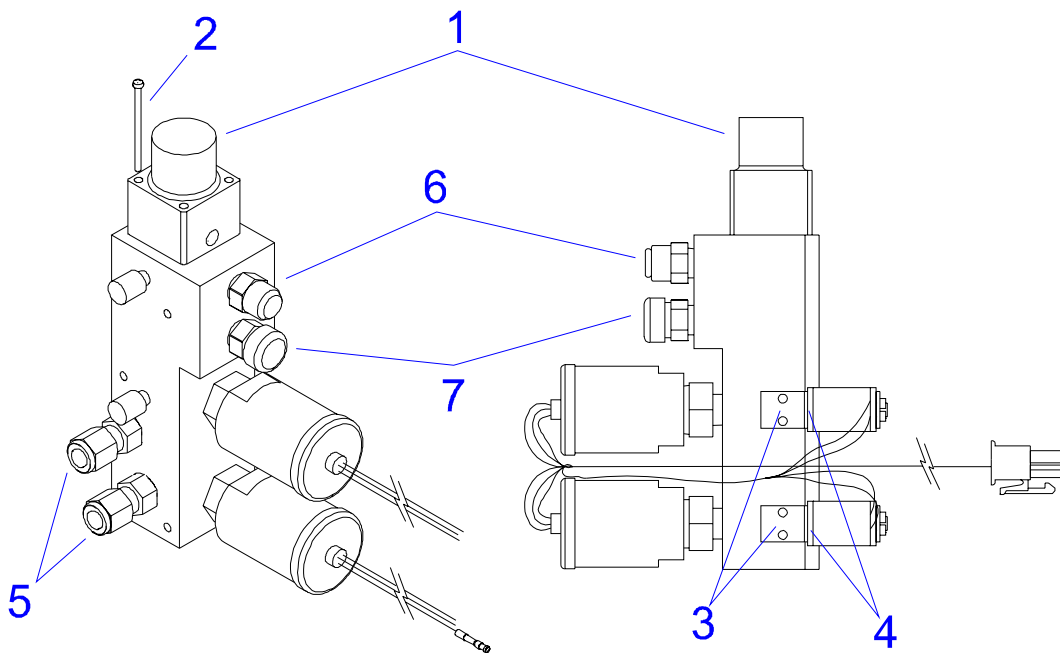
Items marked with a (*) are not identified on the diagram.



Gas Flow Control Module

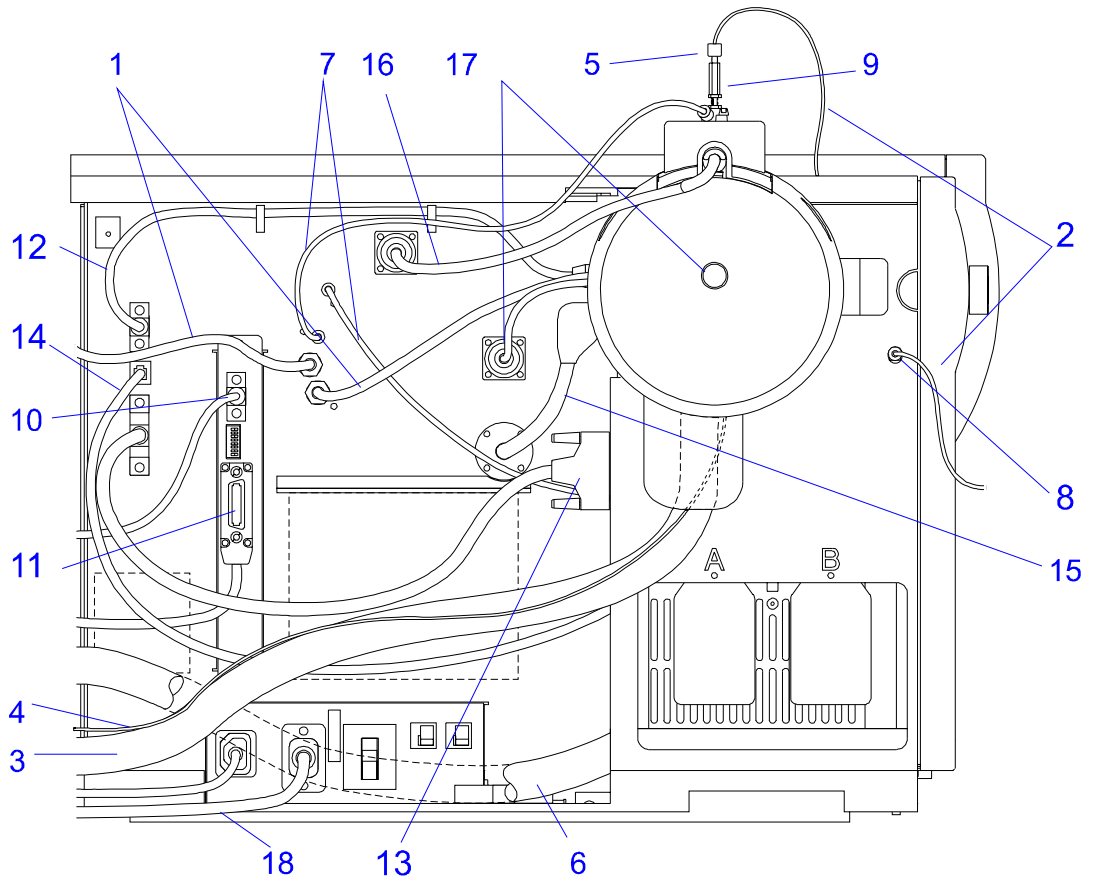
Item #	Description	Part Number
1	Pressure regulator	0100-0949
2	Screw, torx M3 x 30	0515-1349
3	Screw M3 x 0.5, 20 mm	0515-1410
4	O-ring, 2-006 V89	0905-1472
5	Swage nut, 1/4-inch	5180-4105
	1/4-inch ferrule, front	5180-4111
	1/4-inch ferrule, rear	5180-4117
6	15 psi pressure relief valve	0101-0939
7	100 psi pressure relief valve	0101-0940
8	N2 Gas Conditioner	G1946-80047*
	Gas flow module (complete)	G1946-60038

Items marked with a (*) are not identified on the diagram.



External Connectors and Fittings

Item	Description	Part Number
1	Teflon tubing, 1/4-inch	0890-1793
2	PEEK tubing, 1/16-inch od (0.005-inch id), 1.5M	0890-1915
3	Source drain hose, 6 ft	0890-1962
4	Teflon tubing, 1/4-inch (CDS & inlet module waste)	0890-1711
5	Fitting, finger tight PEEK	0100-1516
6	Foreline hose assembly	G1946-60032
7	Gas line, CDS and nebulizer	G1946-60110
8	Inlet union w/fittings (and 10-micron frit)	0101-0949
9	Zero dead volume union	0100-1619
10	Remote control cable	05989-60080
11	HP-IB cable	5181-6128
12	Drying gas heater cable	G1946-60062
13	CDS cable	G1946-60057
14	LON cable kit	G1946-60065
15	Spray chamber cable (high voltage)	G1946-60089
16	APCI heater and cable	G1946-60063
17	APCI needle receptacle and cable	G1947-60101
18	Line power cord:	
	US	8120-8623
	European	8120-8621
	UK/HK/Singapore	8120-8620
	Australia/China	8120-8619
	Denmark	8120-8622
	Swiss	8120-8622
	Japan	G1946-60127
	India/S.Africa	8120-6896
	Israel	8120-8628



Covers

Item	Description	Part Number
1	Top cover	G1946-00003
2	Right hand side panel	G1946-00004*
3	Service panel	G1946-00006
4	Front panel	G1946-40001
5	Hose hole cover	G1946-00023
6	CDS cover	G1946-40036
7	Spray chamber cover	G1946-20185
8	Nebulizer cover:	
	Electrospray	G1946-40034
	APCI	G1946-40035
9	Bottom base	G1946-40002
10	Rubber foot	G1946-20197*
11	Knob hole cover for systems without manual injection valve	G1946-40031*

Items marked with a (*) are not identified on the diagram

Electronic Boards and Cables

Description	Part Number
Printed Circuit Boards	
Adapter PCA	G1946-65007
Analyzer PCA	G1946-65001
Detector PCA	G1946-65011
Display PCA	G1946-60008
HED power supply	G1946-80029
LON junction PCA	G1946-60013
Mother board	G1946-60010
MS interface card (SmartCard II+)	05990-65410
72-pin SIMM	D3577-63001
Octopole driver PCA	G1946-65009
Power distribution gas/temp/flow PCA	G1946-65002
Primary (ac) power module	G1946-65033
RF power amplifier	G1946-65056
RF coil box	G1946-65034
Signal amplifier PCA	G1099-65001
Valve PCA	G1946-60012
Source & Ion Optics Cables	
APCI internal HV cable	G1946-60050
Lens cable assembly	G1946-60070
Octopole control cable	G1946-60049
Octopole cable assembly	G1946-60080
Spray chamber HV cable	G1946-60089
Valve, Heater, LON & Display Cables	
APCI heater / cable	G1946-60063
CDS cable	G1946-60057
Display cable, internal	G1946-60092
Display cable, external	G1946-60069
Drying gas heater / cable	G1946-60047
Drying gas heater cable	G1946-60062
LON cable kit	G1946-60065
Quad heater cable	G1946-60116
Detector Control Cables	

CDEM HV output cable	G1946-60082
HED power cable	G1099-60431
HED control cable	G1946-60048
Iris cable	G1946-60086
Signal cable	G1099-60416
Quad and RF Control Cables	
Quad DC driver cable	G1946-60053
RFPA BNC cable	G1946-60058
RF detector cable	G1946-60052
RFPA power cable	G1946-60060
RFPA SMB cable	G1946-60059
Other Cables	
High Voltage cable	G1946-60035
HP-IB cable	5181-6128
LV primary PS cable	G1946-60068
Remote control cable	05989-60080
Turbo dc power cable	G1946-60108

Shipping Kit

Description	Part Number
Abrasive mesh	8660-0852
Drain bottle assembly	G1946-60111
Exhaust tubing	0890-1727
Fitting, finger-tight PEEK	0100-1516
Foreline exhaust vent adapter	59980-20134
Gas conditioner, N2-specific	G1946-80047
Gloves, nitrile rubber	9300-1751
Grease, Apiezon vacuum	6040-0289
Hook-and-loop tape	0510-1271
HP-IB cable	5181-6128
KF25 clamp	0100-0549
KF25 coseal	0100-1597
Inlet union w/fittings (and 10-micron frit)	0101-0949
Lint-free cloths	05980-60051
Magnifier	G1946-80049
Nebulizer adjustment fixture	G1946-20215
Oil mist filter kit	3162-1056
Oil return line kit	3162-1057
Remote start cable	05989-60080
Safety glasses	9300-1159
Screwdriver, flat blade	8710-1029
Screwdriver, TORX T-15	8710-1622
Screwdriver, TORX T-10	8710-1623
Source drain hose	0890-1962
Teflon tubing, 1/4	0890-1793
Tubing cutter	8710-1930
Tubing, flex .005 ID	0890-1915
Vacuum pump oil	6040-0834
Wire for cleaning capillary	G1946-80054
Wrench, 1/4-inch x 5/16	8710-0510
Wrench, 7/16-inch x 1/2	8710-0806
Wrench, 1/2-inch x 9/16	8710-0877
Wrench, 3 mm	G1946-20203

HP 1946A LC/MSD Replacement Parts

Wrench, hex, 0.8 mm	8710-1225
Wrist strap, ESD	9300-1408
Union, ZDV (nebulizer inlet)	0100-1619
1 ml pipette	9301-1423
50 ml volumetric flask	9301-1424
Pump oil drip pan	G1946-00034
Tool kit, LC/MSD	G1946-60157

Consumables and Supplies

Description	Part Number
Chemical consumables	
APCI negative mode performance evaluation sample	G2425A
Calibrant, ES	G2421A
Calibrant, APCI	G2422A
ES negative mode performance evaluation sample	G2424A
Multiple-charge compound performance evaluation sample	G2426A
OQ/PV standards kit	8500-6917
Positive mode performance evaluation sample (G2423A is used for both ES and APCI)	G2423A
Instrument consumables	
APCI nebulizer needle	G1946-20097
Corona needle (pack of three)	G2429A
EM replacement horn	05971-80103
ES nebulizer needle	G1946-20177
Gas conditioner, N2-specific	G1946-80047
Vacuum pump oil	6040-0834
Tubing, fittings, and ferrules	
Ferrule, 1/16" for CDS waste	0100-1512
Ferrule, 1/16" for valve nuts	0100-1912
Fitting, finger-tight PEEK (for 1/16-inch tubing)	0100-1516
Fitting, nut 1/8-inch OD	0100-1914
Fitting, ferrule, 1/8-inch OD	0100-1919
Teflon tubing, 1/8-inch OD	0890-0746
Tubing, exhaust	0890-1727
Teflon tubing, 1/4-inch for N2 supply and drying gas line	0890-1793
Tubing, 0.005-inch ID, 1/16-inch OD, 1.5 M	0890-1915
Tubing, Turbo 2 outlet	0890-1942
Waste drain hose, spray chamber	0890-1962

O-rings and seals	
O-ring, ISO 63 trapped (steel retaining ring)	0100-1693
O-ring 2-005	0905-0082
O-ring 2-208	0905-0849
O-ring, 2-009	0905-1022
O-ring, vaporizer	0905-1292
O-ring, spray chamber	0905-1464
O-ring, 2-160 Viton	0905-1466
O-ring, Atm / Stage 1 and Stage 1 / Stage 2	0905-1467
O-ring Stage 2 / Stage 3	0905-1468
O-ring, 2-177 Viton	0905-1469
O-ring, Stage 3 / Stage 4	0905-1470
O-ring, 2-006 Viton	0905-1472
O-ring, Viton 2-039	0905-1478
Grease, apiezon	6040-0289

Tools

Description	Part Number
1 ml pipette	9301-1423
50 ml volumetric flask	9301-1424
Ball driver, 1.5 mm	8710-1570
Pliers, needle nose	8710-1094
Safety glasses	9300-1159
Screwdriver, flat blade	8710-1029
Screwdriver, Torx T-10	8710-1623
Screwdriver, Torx T-15	8710-1622
Screwdriver, Torx T-25	8710-1617
Tubing cutter	8710-1930
Wrench, 1/4-inch x 5/16	8710-0510
Wrench, 3/8-inch	8710-0632
Wrench, 7/16-inch x 1/2	8710-0806
Wrench, 1/2-inch x 9/16	8710-0877
Wrench, 11/16-inch x 3/4	8720-0011
Wrench, 15/16-inch	N/A
Wrench, 9/64-inch hex	8710-0060
Wrench, 3 mm, open end	G1946-20203
Wrench, 13 mm (or 1/2-inch)	8710-1574
Wrench, ratchet, 13 mm (or 1/2-inch)	N/A
Wrench, 16 mm	N/A
Wrench, 17 mm	8710-0799
Wrench, spanner	8710-1180
Wrist strap, ESD	9300-1408
HP 1100 Series LC/MSD System Installation Manual	G1946-90037
HP 1100 Series LC/MSD Getting Started	G1946-90035
HP 1100 Series OQ/PV SOP Manual	G1946-90039
Using Your HP ChemStation with Windows NT	G1946-90021
HP 1100 Series LC/MSD Reference Collection CD-ROM	G1946-90036
HP 1100 Series LC/MSD Maintenance and Repair CD-ROM	01100-60002

