1, 3/16" O.D. Air Tube

1" Bolt 2 MicroDot to MicroDot Conn., 1 Air Tube and 2 Fluid Tubes, with 1/8" Compression Fittings on each Tube
Part #100-006

Microdot conn.
Air Side

12"

0.125" Ultra Torr Fitting (3 Total)

Microdot conn.
Vac Side

1" Bolt Feedthrough
1 MicroDot to BNC Conn.
2, 1/4" O.D. Cooling Tubes
Part #100-009

1" Bolt Feedthrough
1 MicroDot to BNC Conn.
2, 1/4" O.D. Cooling Tubes
Part #100-010

Microdot Conn.
3/16" SS Tube

12"

Microdot conn.
3/16" SS tubes

3 each

1" Bolt 1 MicroDot to BNC Conn., 2 Fluid Tubes, and 1 Air Tube
Part #100-007

Microdot conn.
3 each

3/16" Tubes (3)

1" Bolt Feedthrough
2 MicroDot to MicroDot Conn.
2, 3/16" O.D. Cooling Tubes
3, 3/16" O.D. Air Tube
Part #100-008

Air Side

12"

1/4" Dia. Cooling tubes (2)

2.0

Vacuum Side

BNC Conn.

2.00

Vac Side

3.00

MicroDot Connector
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**Part #**
100-012
100-013
100-014

**Part #**
100-015
100-016
100-022

---

1" Bolt Feedthrough
4 MicroDot to MicroDot Conn.
Part #100-012

1" Bolt Feedthrough
3 MicroDot to MicroDot Conn.
Part #100-013

1" Bolt Feedthrough
3 MicroDot to BNC Conn.
Part #100-014

1" Bolt Feedthrough
2 MicroDot to BNC Conn.
Part #100-016

---

1" Bolt Feedthrough
3/16" Air Tube (2)
3/16" Cooling Tubes (2)
Part #100-015

1" Bolt Feedthrough
1 MicroDot to BNC Conn. (1)
1/8" Compression Fitting
Part #100-017

---

MicroDot Connectors (2) Vac Side
BNC Conn.
MicroDot Conn. (2) Air Side

---

1.5
3.0
12.0

---

±.010.XX
±.005.XXX

---

Air Side view
Vacuum side view
Air side view
Vacuum side view
BNC Conn.
3/16" O.D. Tubes (2)
1/8" Compression Fitting
MicroDot Conn. (3)
1" Bolt Feedthrough
MicroDot Connectors (2) Vac Side
BNC Conn. (2) Air Side

---

Date: 10-25-94
Scale: 1=1
Dwg: 100-012

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-013

---

Date: 3-09-99
Scale: 1=1
Dwg: 100-014

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-015

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-016

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-017

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-018

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-019

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-020

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-021

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-022

---

Date: 08-10-95
Scale: 1=1
Dwg: 100-023
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**Part #400-000**
- 2 MicroDot to BNC Conn.
- 2, 3/16" O.D. Cooling Tubes (2)
- 2 3/4" ConFlat Flange

**Part #400-001**
- 3 MicroDot to BNC Conn.
- 2, 3/16" O.D. Cooling Tubes (2)
- 2 3/4" ConFlat Flange

**Part #400-002**
- 4 MicroDot to BNC Conn.
- 1/8" Compression Fittings (2)
- 2 3/4" ConFlat Flange

**Part #400-003**
- 2 MicroDot to BNC Conn.
- 2, 1/8" Compression Fittings

**Part #400-004**
- 3 MicroDot to BNC Conn.
- 2, 1/8" Compression Fittings

**Part #400-005**
- 4 MicroDot to BNC Conn.
- 2, 1/8" Compression Fittings

---

**Title:**

**Tolerance:**
- ±.010.XX
- ±.005.XXX

**Break all corners**

**Sheet:**
- 1 1

**Dwg:**
- 400-000
- 400-001
- 400-002

**Date:**
- 02-02-96

**Scale:**
- 1=1

**Date/ECN/Description/Rev:**
- 09.0
- Preliminary 1
Part #  
400-006  
400-007  
400-008

2 3/4" ConFlat Flange  
4 Microdot to BNC Connectors  
2 Cooling Tubes
PN 400-006  

2 3/4" ConFlat Flange  
2 MicroDot to BNC Connectors  
2-3/16" O.D. Fluid Tubes  
1-3/16" O.D. Air Tube
Part #400-007

2 3/4" ConFlat Feedthrough  
2 MicroDot to BNC Connectors
Part #400-008

2 3/4" ConFlat Flange  
3/16" O.D. Tubes

Microdot Conn. (2)

BNC Conn. (2)

2.75" ConFlat Flange  
3/16" O.D. Tubes  
(4)

Microdot Conn. (4)

BNC Conn. (4)

2.43

3/16" SS Tube (2)

2 3/4" ConFlat Flange  
1 MicroDot to BNC Conn.  
3. 1/8" Compression Fittings
Part #400-009

2 3/4" ConFlat Flange  
2 MicroDot to BNC Conn.  
2. 3/16" O.D. Tubes  
Part #400-010

2 3/4" ConFlat Flange  
1 MicroDot to BNC Conn.
3. 1/8" Compression Fittings
Part #400-008
Dual Sensor Parts List

Single Sensor Parts List

700-067 Rebuild Kit

- Sensor Body
- Back Plate
- Spacer
- Pneumatic Actuator
- Actuator Bracket
- Lock Washer
- Connector
- Connector Pin
- SS Screw
- Crystal Holder
- Spring
- SS Washer
- Lock Washer
- Deposition Shield
- Contact Spring
- SS Screw
- Crystal Holder Spring
- Sensor Body
- Thick Insulator
- Thin Insulator
- SS Nut
- SS Washer
- Back Cover Plate
- 4-40 screw
- 700-067 Kit includes parts 14,15,16,17,18,19,20, and 23

Kit #712-021 includes all parts shown, except #1 and #4

712-021 Dual Sensor shutter Kit

McVac Manufacturing, Inc.

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Sensor/Feedthrough Welded
Specify L Dimension
In Vacuum Cable Included
Part # 800-002

Sensor/Shutter/Feedthrough Welded
Specify L Dimension
In Vacuum Cable Included
Part # 800-003

Shuttered Sensor/ 2 3/4" CF Feedthrough
Part # 800-004
Includes cable

Sensor/Shuttered Sensor/CF Feedthrough
Specify L Dimension
Part # 800-005

Sensor/Feedthrough Welded
Specify L Dimension
In Vacuum Cable Included
Part # 800-001

Dual Sensor/Shutter 1" Bolt Feedthrough
Specify L Dimension
Part # 800-006

Right Angle Dual Sensor on a 1" Bolt Feedthrough
Specify L Dimension
In Vacuum Cable Included
Part # 800-005

---

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**Part #**

- 800-008
- 800-013
- 800-023

**Part #**

- 800-024
- 800-025
- 800-086

---

**Title:**

- RA Sensor, 2.75" CF Flange
- RA Sensor Feedthrough
- Standard Single Sensor
- Dual Sensor on a 2 3/4" CF Flange
- Single Sensor on a 1" Bolt Feedthrough
- Standard 1" Bolt Feedthrough
- Single Sensor on a 2 3/4" CF Flange
- Single Sensor on a 2 3/4" CF Flange with coiled cooling lines

**Tolerance:**

- ±.010.XX
- ±.005.XXX

**Sheet:**

- 1

**Date:**

- 2-7-97
- 7-8-92
- 4-25-97

**Rev:**

- Preliminary1

**Dwg:**

- 800-024
- 800-008
- 800-008
- 800-025
- 800-025
- 800-086
- 800-023

---

**Description:**

- Dual Sensor on a 2 3/4" CF Flange
- In Vacuum Cables Included
  - Specify L Dimension
  - Part #800-008

- Single Sensor on a 1" Bolt Feedthrough
  - with coiled cooling lines
  - Specify L1 and L2 Dimensions
  - Part #800-024

- Single Sensor on a 2 3/4" CF Flange
  - with coiled cooling lines
  - Specify L1 and L2 Dimensions
  - In Vac Cable Included
  - Part #800-025

- Right Angle Sensor on a 1” Bolt Feedthrough
  - In Vacuum Cables Included
  - Specify L Dimension
  - Part #800-013

- Right Angle Sensor welded to a 2.75” CF Flange
  - and any Bend Configuration
  - In Vac Cable Included
  - Part #800-023

---

**Notes:**

- In-Vac Coax Cable Included
- 3/16" Dia. Cooling Tubes
- NW 40 Flange
- BNC Conn.
Part # | Description
--- | ---
700-050 | Cables
700-051 | See Drawing

Part # | Description
--- | ---
900-004 | Crystals
900-008/007 | See Drawing

Pneumatic Actuator
50 PSI operating pressure

Shutter Package for Single Sensor
Part #700-050

Shutter Package for Dual Sensor
Part #700-051

Crystal Oscillator
Part #900-004
Supplied with Male BNC Adaptor and Test Crystal

McVac Mfg. Co. Inc
Solenoid Valve Kit for Shutter Actuator
24v 900-007
115v 900-008

Shutter Screw

#4-40 hardware

Mounting Bracket & Hardware

1/8" Air Tubulation

Deposition Shield
Shutter

Spacer and Back Plate

1/8" Air Tubulation

Shutter Screw

#4-40 hardware

Mounting Bracket

Standard In-Vac Cable
Part #900-001
(Silver Stranded Shield)
Part #900-001T (Teflon Jacket Shield)

3.00

MicroDot to BNC Cable
Part #900-002

6.0

BNC to BNC Cable
6" Length
Part #900-006
Part #900-005 (10" Length)

Male BNC Adaptor

Coating Side View

McVac Quartz Crystal
Part #900-003 (6 MHz Gold)
Part #900-003A (6 MHz Alloy)
Part #900-003S (5 MHz Silver)
Part #900-003SN (5 MHz Gold)

Solenoid Valve

Power Adapter
Black
Red

To Relay or Switch

Test Button

1/8" NPT Fitting

Back Side View Showing Spring Contact Pattern

Feedthrough

3/16" Swagelok Fitting

250 Dia. Flex. Tubing From Air Supply

250 Dia. Flex. Tubing To Shutter Line

Instrument 0000

900-004

Feedthrough End

Male BNC Crystal End

2-10-98

Date

900-001

Page 26