Retrotec Inc
Gauge Calibration Procedure

1. Completely fill out the Gauge Calibration Information Sheet.
2. Choose an appropriate calibration sheet for each gauge to be calibrated.
3. The tested gauge is zeroed according to Retrotec Instructions per the manual.
4. A piston pump that will maintain a steady differential pressure across both ports of the gauge under test is used to set and control the test pressure. The piston pump is used as it has the least sensitivity to small atmospheric pressure changes that will throw off the test results.
5. Differential pressure across the ports of the gauge under test is slowly increased from zero, stopping when the test pressure is within each of the *Ascending* test point ranges. During this phase of the test, do not decrease pressure to get to the target pressure range, if you over-shoot, you must start the test again.
6. At each test point, the actual master manometer pressure and the gauge-under-test pressure reading is recorded.
7. Once the maximum pressure for the gauge has been reached, the test pressure is then slowly decreased, stopping when the test pressure is within each of the *Descending* test point ranges. During this phase of the test, do not increase pressure to get to the target pressure range, if you over-shoot, you must start again.
8. At each test point, the actual master manometer pressure and the gauge-under-test pressure reading is recorded.
9. Once the minimum test pressure for the gauge is reached, apply a zero differential pressure across the ports and record the zero measurement.
10. As a final check, the differential pressure is slowly increased stopping when the pressure is within each of the *Final Check* pressure ranges. During this phase of the test, do not decrease pressure to get to the target pressure range, if you over-shoot, you must start again.
11. At each test point, the actual master manometer pressure and the gauge-under-test pressure reading is recorded.
12. Fax completed set of forms to Retrotec at USA-360-647-7724

Test data is fed into Retrotec's Calibration manager that creates a seamless set of equations over the entire tested pressure range and a new Retrotec Gauge Certificate is generated.

Additionally, a revised software license is created, containing the new gauge calibrations which can be loaded into CA2001 or E2001 software that will now automatically correct each gauge reading.

Retrotec Gauge Calibration
Information Sheet
Page 1 of ____

Date of Calibration: _____

Company Doing the Calibration

Company Name	_____	Complete Int'l Phone #	_____
Calibration Technician	_____		_____
Master Gauge Type	_____	Master Gauge Last Calibration Date	_____

Company That Owns Gauges

Company Name	_____	Contact Phone #	_____
Contact Name	_____	Address	_____

System Information

These gauges belong to (circle one)	800 Console	900 Console	2000 Console	Analog Gauge Clip	3 Fan Control	Loose Gauges	Digital Gauge

Number of: 60 Pa Gauges _____ 250 Pa Gauges _____ Digital Gauges _____

Serial # of Console or Gauge Clip: _____

Console Model # or Other Details: _____

Gauge #1 (circle) 60 250 Digital Serial # _____

Gauge #2 (circle) 60 250 Digital Serial # _____

Gauge #3 (circle) 60 250 Digital Serial # _____

Retrotec Gauge Calibration
60 Pa Gauge Calibration Sheet
Page ____ of ____

Date of Calibration: _____

Serial # of 60 Gauge _____		
Master Gauge Target Point (Pa)	**Master Gauge Reading (Pa)**	**60 Gauge Reading (Pa)**
10 +/- 1 Ascending		
14 +/- 1 Ascending		
17 +/- 1 Ascending		
25 +/- 2 Ascending		
35 +/- 2 Ascending		
50 +/- 5 Ascending		
35 +/- 2 Descending		
25 +/- 2 Descending		
17 +/- 1 Descending		
14 +/- 1 Descending		
10 +/- 1 Descending		
0 +/- 1		
8 +/- 1 Final Check		
12 +/- 1 Final Check		
15 +/- 1 Final Check		
20 +/- 2 Final Check		
30 +/- 2 Final Check		
40 +/- 5 Final Check		
55 +/- 5 Final Check		

Retrotec Gauge Calibration
250 Pa Gauge Calibration Sheet
Page ____ of ____

Date of Calibration: _____

Serial # of 250 Gauge _____		
Master Gauge Target Point (Pa)	**Master Gauge Reading (Pa)**	**250 Gauge Reading (Pa)**
30 +/- 1 Ascending		
40 +/- 1 Ascending		
60 +/- 2 Ascending		
90 +/- 2 Ascending		
130 +/- 2 Ascending		
180 +/- 5 Ascending		
130 +/- 5 Descending		
90 +/- 2 Descending		
60 +/- 1 Descending		
40 +/- 1 Descending		
30 +/- 1 Descending		
0 +/- 1		
25 +/- 1 Final Check		
35 +/- 2 Final Check		
50 +/- 5 Final Check		
75 +/- 2 Final Check		
100 +/- 5 Final Check		
150 +/- 5 Final Check		
200 +/- 5 Final Check		

Retrotec Gauge Calibration
Digital Gauge Calibration Sheet
Page ____ of ____

Date of Calibration: _____

Serial # of Digital Gauge _____		
Master Gauge Target Point (Pa)	**Master Gauge Reading (Pa)**	**Gauge Reading (Pa)**
10 +/- 1 Ascending		
14 +/- 1 Ascending		
17 +/- 1 Ascending		
25 +/- 2 Ascending		
35 +/- 2 Ascending		
320 +/- 5 Ascending		
35 +/- 5 Descending		
25 +/- 2 Descending		
17 +/- 1 Descending		
14 +/- 1 Descending		
10 +/- 1 Descending		
0 +/- 1		
8 +/- 1 Final Check		
12 +/- 1 Final Check		
15 +/- 1 Final Check		
20 +/- 2 Final Check		
30 +/- 1 Final Check		
40 +/- 5 Final Check		
350 +/- 5 Final Check		

Local Fan Calibration

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When fans leave the Retrotec factory they come with a base fan calibration that requires both flow pressure and room pressure. These two values yield the flow when put into the flow formula. The room pressure modifies the flow by a small percentage since the fan flow is somewhat dependent upon back pressure to arrive at the most accurate flow value. The base fan calibration formula is modified by a factor that brings each range into line when compared to an actual test of the fan under lab conditions. Each fan varies from 0 to 4% up or down from the standard generic calibration curves. This calibration feature is one reason why the Retrotec fans are so amazingly accurate over such a wide range of back pressure conditions. The fan is fairly immune to different inlet conditions so a large variation should not be expected in this regard.

You must tell us the amount of error you want corrected out of your fan and we can supply the calibration upgrade

license for CA2001 or E2001 so you fan(s) are corrected automatically as you use them. We charge $100US to update the license information and create a new calibration certificate for each fan.

Ensure the fan is blowing away from the operator.
Record as many flow points as you have measured:

Range Configuration (whether the plate is off or what fan ring was in place) _____

Room pressure	Flow pressure	Retrotec flow	Measured flow	Flow units
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____

Range Configuration (whether the plate is off or what fan ring was in place) _____

Room pressure	Flow pressure	Retrotec flow	Measured flow	Flow units
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____
_____	_____	_____	_____	____