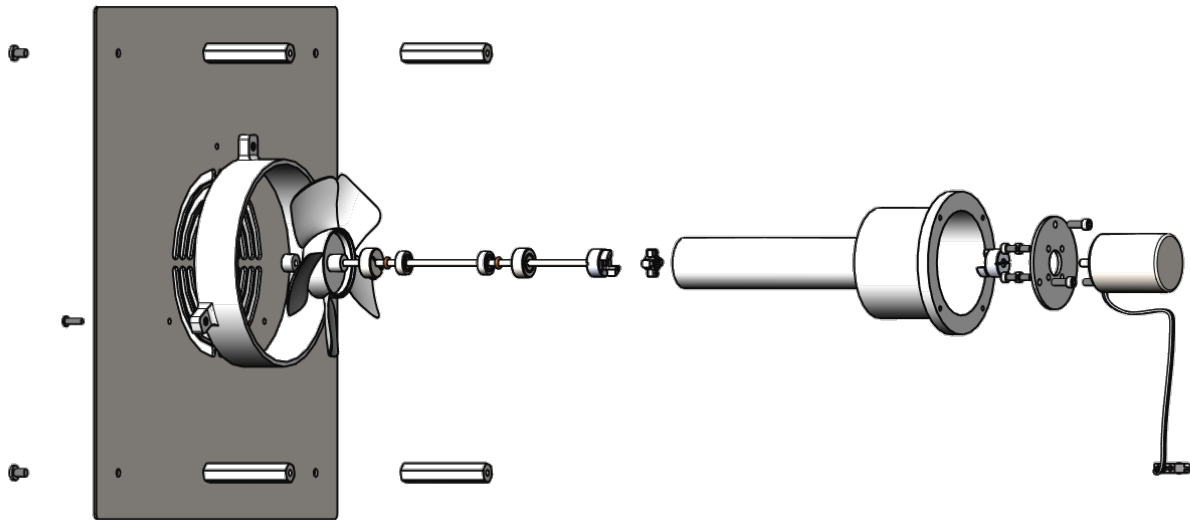


Humidity Generation and Calibration Equipment

**THUNDER SCIENTIFIC®**  
**CORPORATION** THE HUMIDITY SOURCE

# *Model 2900*

## Chamber Fan Component Replacement Procedure



Tech Support Document TSD-0317  
Revision Date: February 1, 2024

623 WYOMING BLVD. SE



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## Chamber Fan Components Replacement Procedure

1. First turn off the main power switch and unplug the power cord.

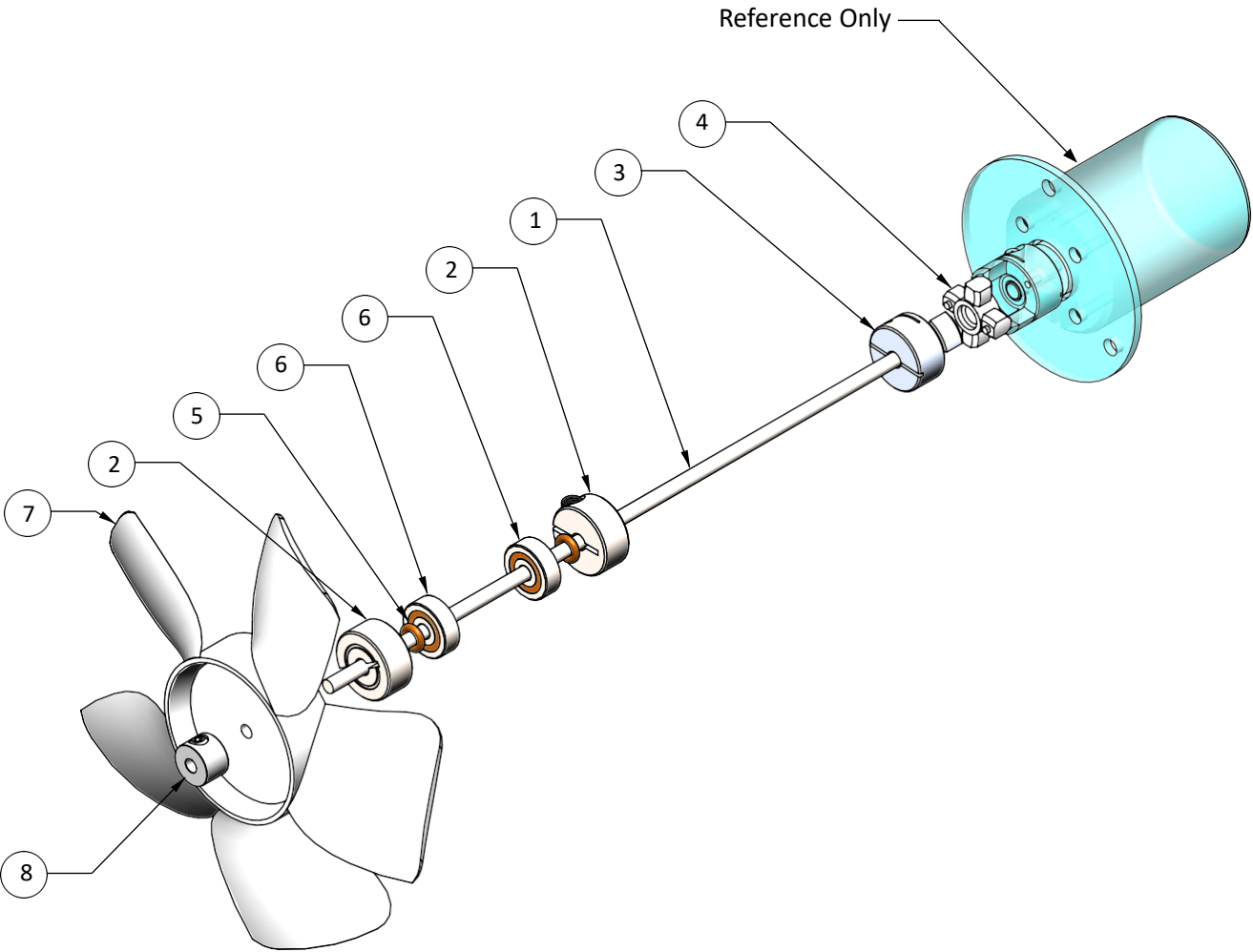


2. Next remove the rear panel using a #10 Torx driver.

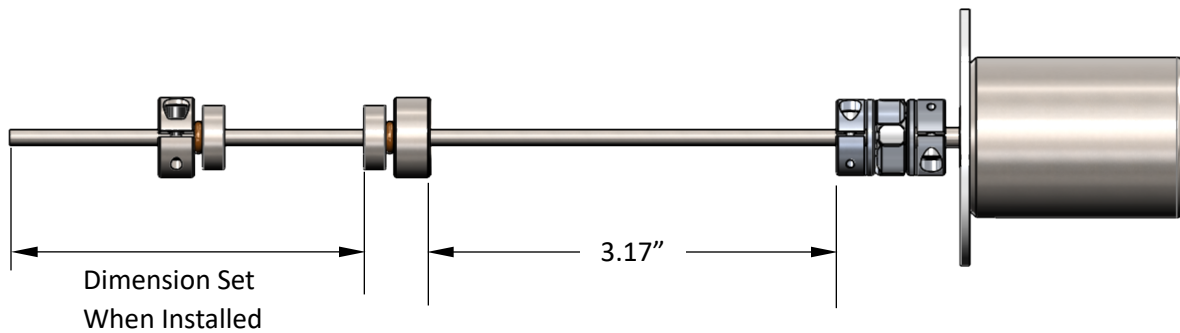


3. Contents of kit Number D23A29322

ITEM NO.	STOCKCODE	DESCRIPTION	QTY
8	9946K41	SET SCREW SHAFT COLLAR - 1/8" I.D.	1
7	5JLL2	4" FAN BLADE	1
6	SR2AC-20S	.125 X .500 CERAMIC BALL BEARING	2
5	OR006V	1/4" O.D. X .006 O RING	2
4	JD10/15-85B	JAW COUPLING SPIDER	1
3	JC10-2-A	1/8" JAW COUPLING HUB	1
2	CL-2-SS	1/8" SHAFT COLLAR	2
1	A1-67	.125 X 6.75 PRECISION SHAFT	1
0	D11A25090	Krytox 240AB grease syringe	1



4. Set the dimension between the shaft collar #2 and the Jaw coupling hub #3 at a distance of 3.17".
5. Make sure the shaft #1 is flush with the inside face of the Jaw coupling hub. Make sure the hub is secure using a 3/32" hex key. Then check that the shaft collar is secure at the set distance.

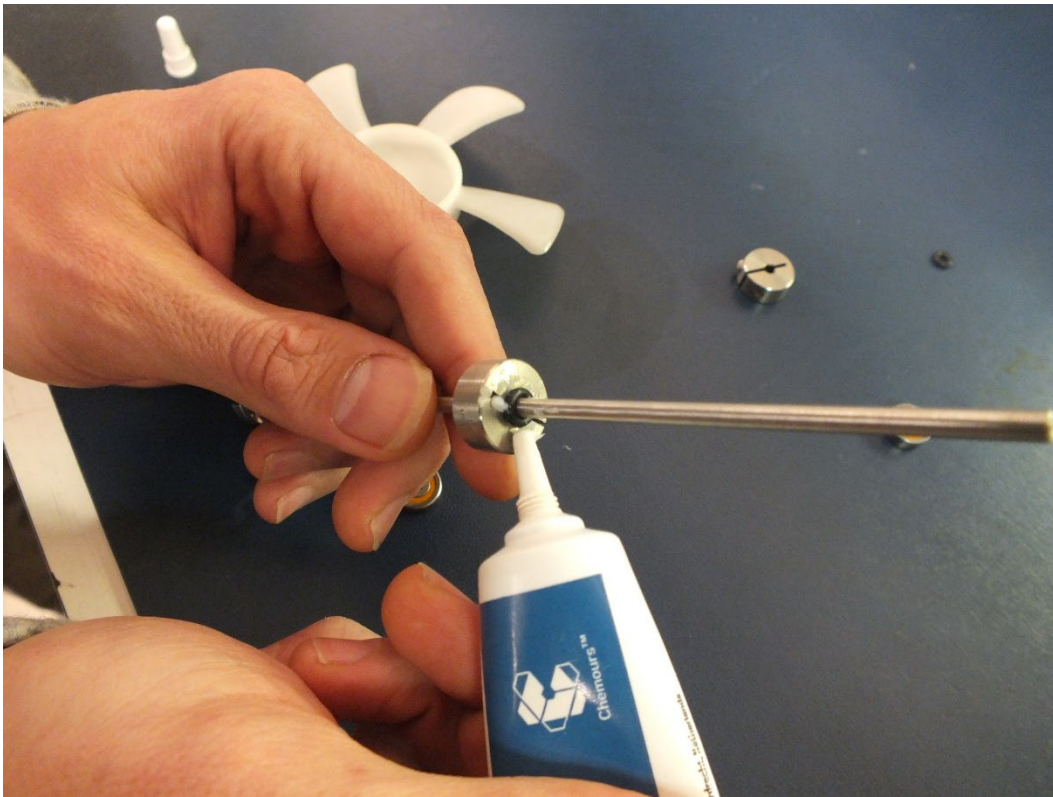


6. Apply Krytox 240AB grease to flat smooth face of fixed Shaft Collar, not the recessed side.





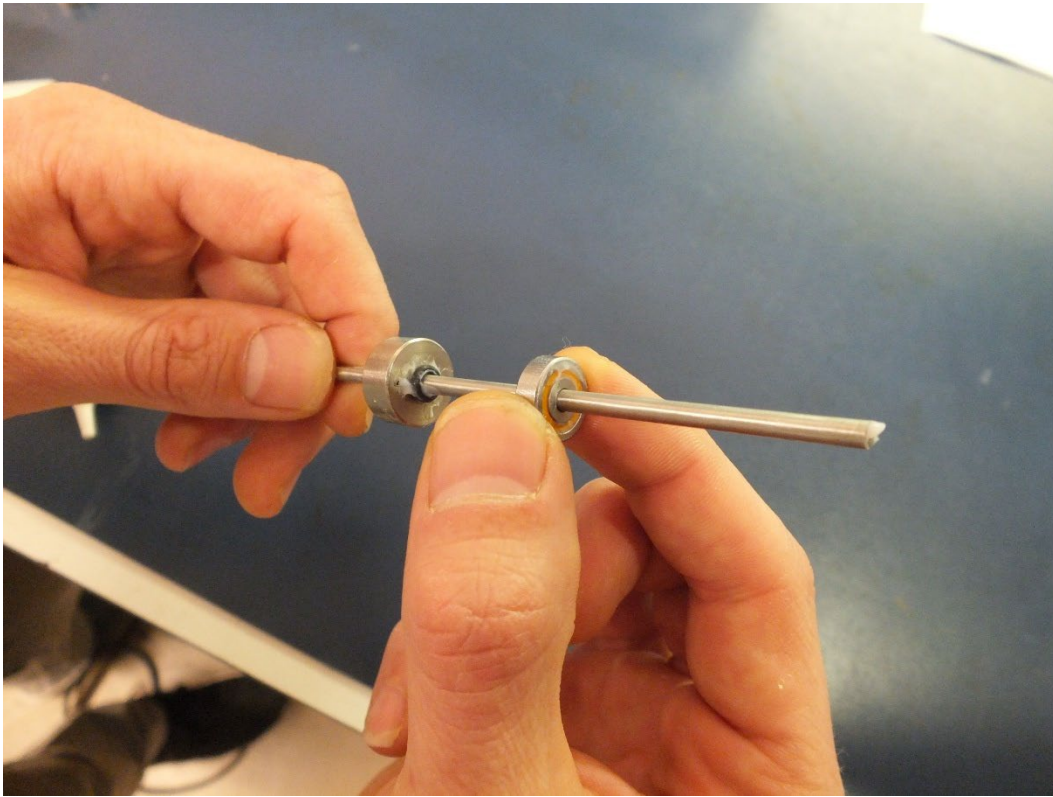
7. Slide on the O-ring on until it touches the greased face of the collar and apply a small amount of grease to the O-ring.



8. Apply grease to face of the Bearing.



9. Slide on the Bearing so that the face you just greased faces the O-ring.



10. Open the test chamber door and remove the chamber temp probe.





11. Remove the fan shroud panel using a Phillips head screwdriver and save the four #8-32 x 1/4" Pan Head Phillips head screws.



12. Take off the fan using a 1.5mm Allen wrench and remove the set screw collar and take note which way the fan is facing. If it's an older model, then just pull the fan off.



13. Loosen the set screw in the shaft collar using a 3/32" Allen wrench and remove it.



14. Move to the rear of the unit and use a 6/32" Allen wrench, remove the three #6-32 x 3/8" Socket Head Cap Screws at the fan motor assembly.





15. Pull out the fan motor assembly and if it doesn't come out with the shaft you will have to push the shaft from the inside of the chamber and do not use old shaft parts.



16. Take the new shaft assembly and place it on the fan motor Jaw Coupling Hub and slide it into the motor housing tube and replace the three #6-32 x 3/8" Socket Head Cap Screws.



17. Manipulate the shaft and guide the Bearing into outer race and pull the shaft, make sure it seats fully. Then pull on the shaft.



18. Take a set of calipers and use the step gauge to check the amount the shaft sticks out and measure the length of the shaft and record the measurement.

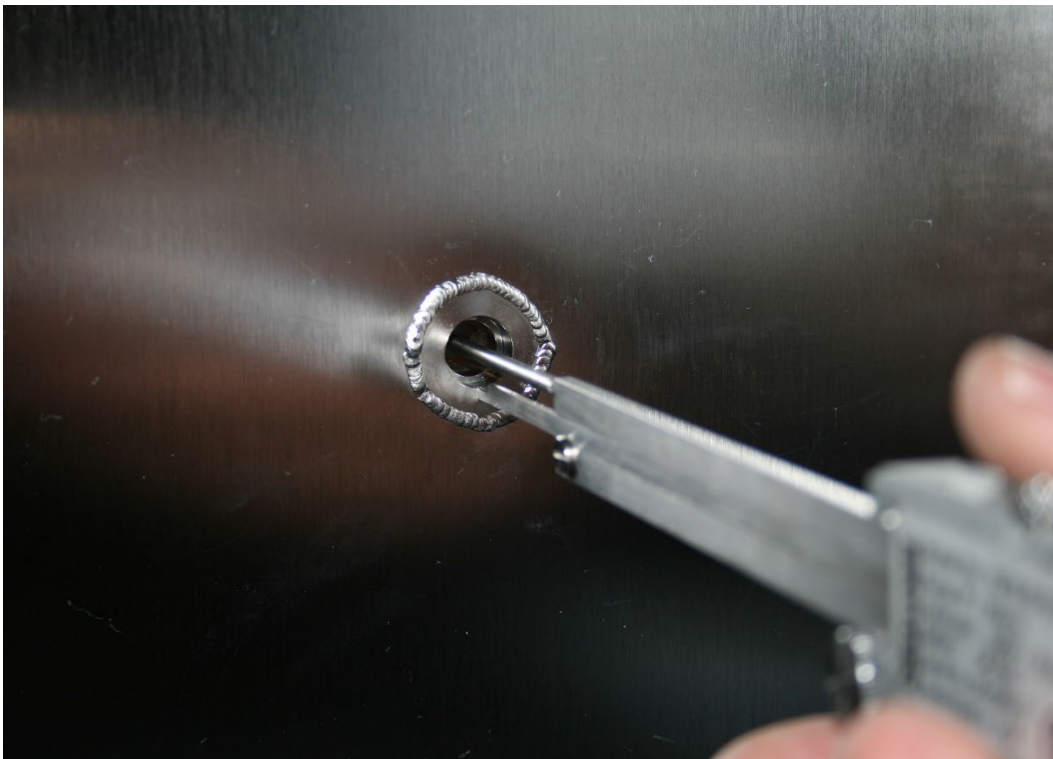




19. Push on the shaft towards Motor until stationary.



20. Use the step gauge again and measure the length of the shaft and record the measurement.





## Push-Pull Test

This test is to confirm that the Jaw Coupling Subassembly is spaced correctly. See the table below for target measurements.

(Pull Measurement) - (Push Measurement)	Response
< 0.020"	If the shaft feels rigid or moves less than 20 thousandths of an inch.
0.020" < Difference < 0.040"	If the difference in measurements is between 20 and 40 thousandths of an inch, the shaft and motor have been assembled correctly. Move on to the next step.
> 0.040"	If the shaft moves by more than 40 thousandths of an inch or the bearing falls out of its race.

21. Remove the fan motor assembly by itself.



22. Have a partner go to the rear of the system and lightly press the Shaft Subassembly into the Housing to prevent the shaft from pushing back out. Maintain this pressure for the next step.



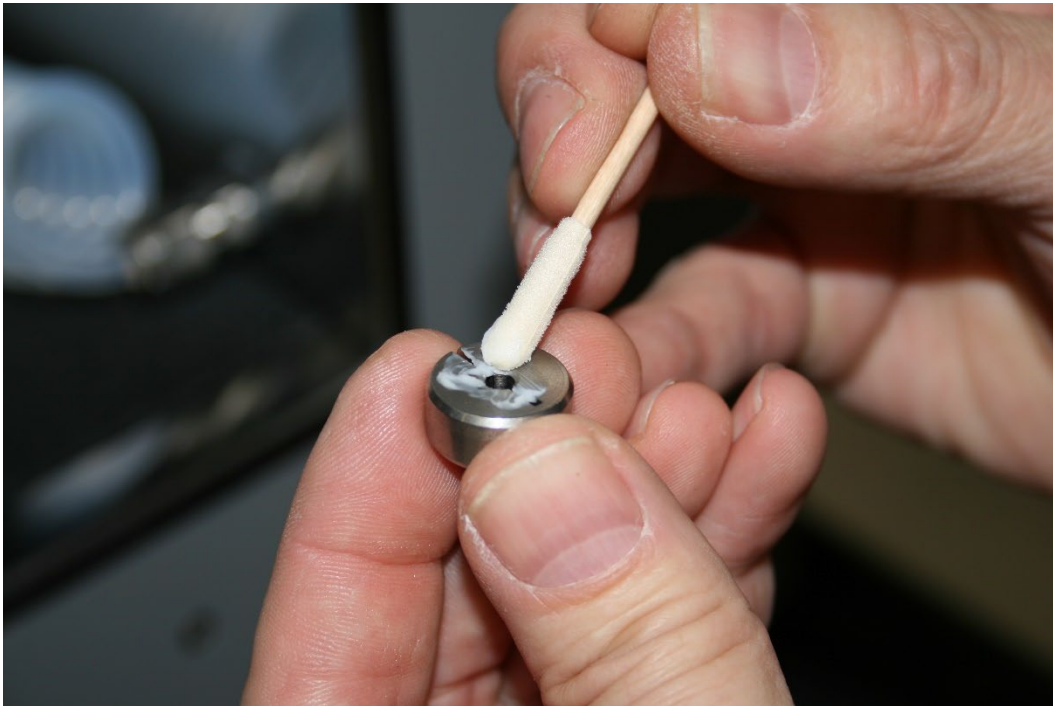
23. Push the Bearing on the shaft until it seats in the Bearing housing in the chamber wall.



24. Slide on the O-Ring.



25. Apply Krytox 240AB grease to the O-Ring and smooth side of the Shaft Collar.





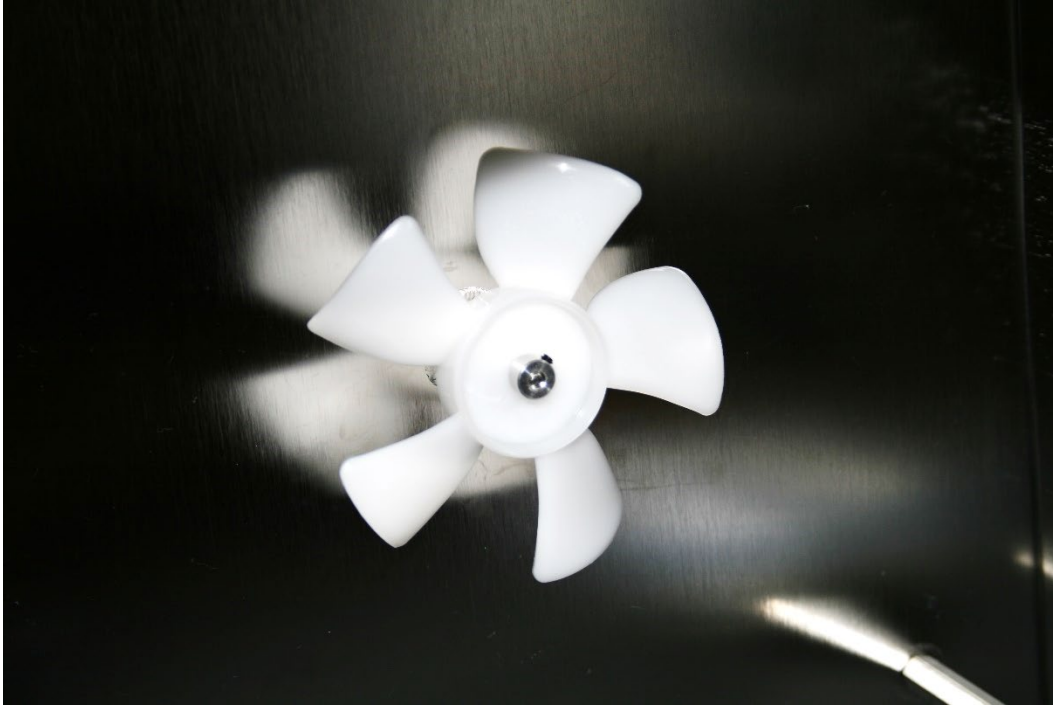
26. Push the O-ring until it's up against the Bearing, then push the Shaft Collar until it touches the O-ring. Then tighten the Shaft Collar using a 6/32" Allen wrench.



27. Push on the fan blade making sure the collar ring is towards the rear, and that the shaft sticks out by 1/4".



28. Then add the set screw shaft collar until it's flush with the shaft front.



29. Tighten the set screw shaft collar until snug using a 1.5mm Allen wrench.



30. Reinstall the fan motor assembly using the three #6-32 x 3/8" Socket Head Cap Screws to secure it.



31. Reinstall the fan shroud but first make sure the standoffs are tight first.





32. Using a Phillips head screwdriver, use the same four #8-32 x 1/4" Pan Head Phillips head screws to mount the panel.



33. Reinstall the chamber temp probe and you are done.



Please Call 1-800-872-7728, Fax 1-505-266-6203, or E-mail [support@thunderscientific.com](mailto:support@thunderscientific.com) should you have any questions.