

RTi-QAT Quality Air Test Kit w/ Digital Hygrometer

Save thousands of dollars by identifying the three (3) major causes of refinish problems:

- Inadequate compressed air supply
- Compressed air humidity
- Particulate and/or oil contamination

A few minutes spent testing your air supply will save your business thousands of dollars by avoiding refinish problems.

COMPRESSED AIR SUPPLY

Using RTi's special high volume air adjusting valve (this test is intended to give four elements of information concerning compressed air).

1. Static air pressure at the gun.
2. Dynamic air pressure at the gun.
3. Air pressure drop from the compressed air source to the point of use.
4. Adequate or inadequate compressed air supply.

PROCEDURE FOR THE TEST:

1. Static air pressure at the gun:
 - Attach the air valve to the gun.
 - Connect the air supply to the air valve
 - Read the gauge. This reading will be the static reading (make a note of the reading).
2. Dynamic air pressure at the gun:
 - Set the fan and the material control knobs in the wide-open position.
 - For the dynamic reading depress the trigger to the full back position or to the material stroke.
 - While the trigger is in the full back position, read the gauge (make a note of the reading).
3. Air pressure drop from the compressed air source to the point of use:
 - Subtract the dynamic reading from the static reading. The total is the pressure drop from the compressed air source to the point of use.
4. Adequate or inadequate compressed air supply:
 - While the gun is set in the wide-open position and the trigger in the full back position, set the gauge at the desired pressure. Hold this for two minutes.
 - If there is no pressure drop, there is adequate compressed air to operate that particular spray gun.
 - If the gun is unable to maintain the needed air pressure, **DO NOT ATTEMPT TO SPRAY**. Spraying with inadequate air can only lead to unsatisfactory refinish work.

COMPRESSED AIR HUMIDITY

TO TEST HUMIDITY LEVEL:

1. Install humidity gauge manifold into RTi-QAT housing. Turn on tester.
2. Connect RTi-QAT to air supply at location you want to test.
3. Adjust regulator until the pressure gauge is at 50 PSI.
4. Let run until gauge stabilizes (the number displayed is compressed air humidity).

COMPRESSED AIR HUMIDITY (CAH):

- A. The gauge assembly only needs to be tightened until you feel it touch the o-ring.
- B. Disconnect the air supply before unscrewing the gauge manifold.
- C. CAH less than 10% at 70 °F or less than 3% for waterborne for most paint applications.

For trouble free refinish applications, CAH is best at 0, but allowable up to 10% for solvent.



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HUMIDITY GAUGE:

To Turn On: Press and release ON button.

To Turn Off: Wait 5 minutes (gauge automatically turns off) or press and hold ON button until it turns off.

Notes:

- A. **To read temperature or dew point:** Press and release ON button to switch from Compressed Air Humidity to temperature. Press and release ON button once again to switch to the dew point temperature or press and release again to return to CAH. All specs are to be read in Fahrenheit.
- B. **To change battery:** Insert coin into either slot and turn coin to lift the display assembly from the gauge housing. Slide the button battery out. Insert new battery with the + side showing. Battery life is approximately 200 hours. The battery icon shows one black segment when the battery is getting low. The gauge uses three AAA batteries.

COMPRESSED AIR CONTAMINATION

THE VALUE OF CLEAN AIR:

The RTi-QAT system also enables you to easily test the quality of the air in compressed air lines, filters, hoses and related equipment. Clean dry air, free from humidity, oil, and particulate contamination, is essential for many professional applications, especially painting. The RTi-QAT system isolates contaminants as small as .45 micron (less than 20 millionths of an inch) and thereby permits close inspection to determine the source of the problem. Testing takes only minutes but can prevent or solve contamination problems, which could cost thousands of dollars.

TO TEST FOR CONTAMINATION:

1. **Clean Housing:** Look into housing assembly and air passage. Use a cotton swab or clean cloth and solvent to wipe out any contamination.
2. **Install Filter:** Place a new white test filter (use filter only once) onto the lid's bronze filter support and install o-ring to hold filter in place. Screw lid onto housing assembly until you just feel the o-ring being compressed. Note: Insert only the white test filter; the paper serves as a filter divider. Bronze filter support is permanent and never needs to be removed.
3. **Close regulator:** Turn control knob to reduce pressure setting.
4. **Set to 20-35 PSI:** Connect AQTK to desired checkpoint in the compressed air supply and turn the regulator knob until 20-35 PSI is indicated on the pressure gauge.
5. **Test 5 minutes or more:** Turn regulator knob to reduce pressure to 0, disconnect AQTK from the air line, unscrew the lid and remove the filter.
6. **Inspect Filter:** Place the filter on a flat surface and then place the 30x microscope on top of the filter; and turn on light. Focus to identify particulate. The integral 8x magnifier can also help identify the contaminate. After testing, place filter in clear storage bag and record test conditions for future comparisons. Wipe inside of RTi-QAT housing, clean before storage.

WARNING - Read All Operator's Instructions prior to using the RTi-QAT Quality Air Test Kit. Failure to operate this equipment in accordance with the manufacturers' instructions can result in physical harm.



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HUMIDITY TESTING PROCEDURE

1. Adjust pressure to the tester to 50 PSI.
2. Set tester to dew point (once on, push ON button twice).
3. Use phone app (Calculator of Air for iPhone, or Michell Instruments for Android) to convert dew point into paint company standard (or 70 °F) air temperature.
4. In phone app, enter 70 °F for temperature on the tester and insert dew point number from the tester and hit the equals (=) sign to obtain the compressed air humidity (CAH) number. If app is not available, use attached Wet Bulb chart to find CAH.
5. Record humidity number and compare to paint company specifications.

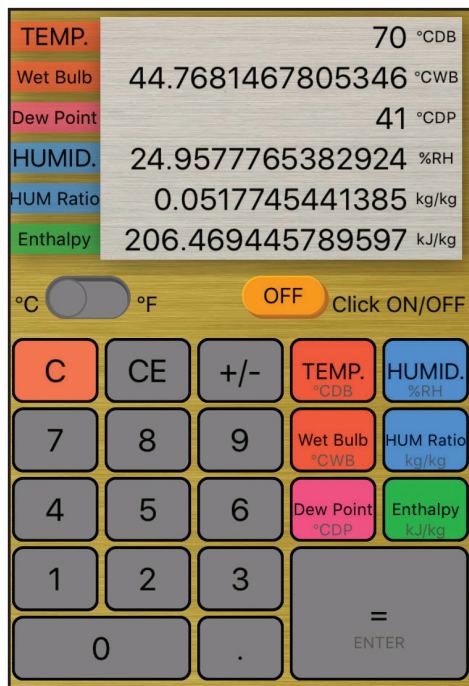
Humidity needs to be below 10% for solvent and below 4% for water at 50 PSI.

EXAMPLE OF TESTING PROCEDURE

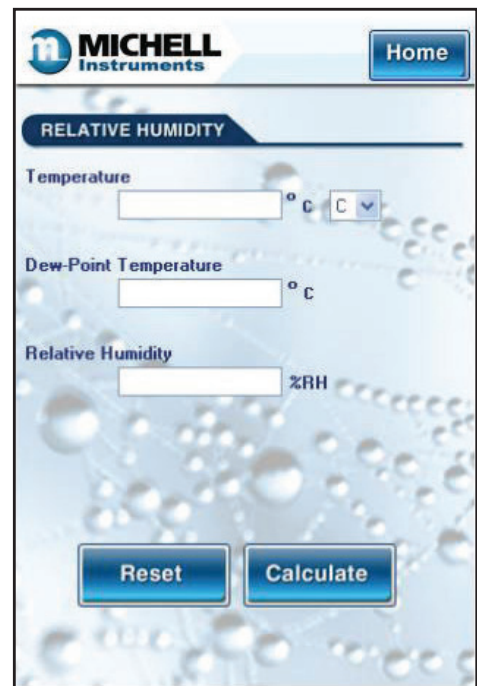
The below list is a sample of readings and procedures that is used to find the CAH in your airlines using our QAT kit.

1. Plug in tester.
2. Set pressure at 50 PSI.
3. Run until stabilizes.
4. Measure dew point from tester: (41 °F)
5. Go to app, input 70 °F to comply with paint company standards and enter the dew point and hit enter to calculate humidity (write it down).
6. If phone app is not available, use attached Wet Bulb chart to figure humidity at 70 °F.
7. Enter humidity reading from app or Wet Bulb data from chart to get actual humidity: 24.96% CAH in air lines.

Below is an example of the “Calculator of Air” app available for iPhone



Below is an example of the “Michell Instruments” app available for Android



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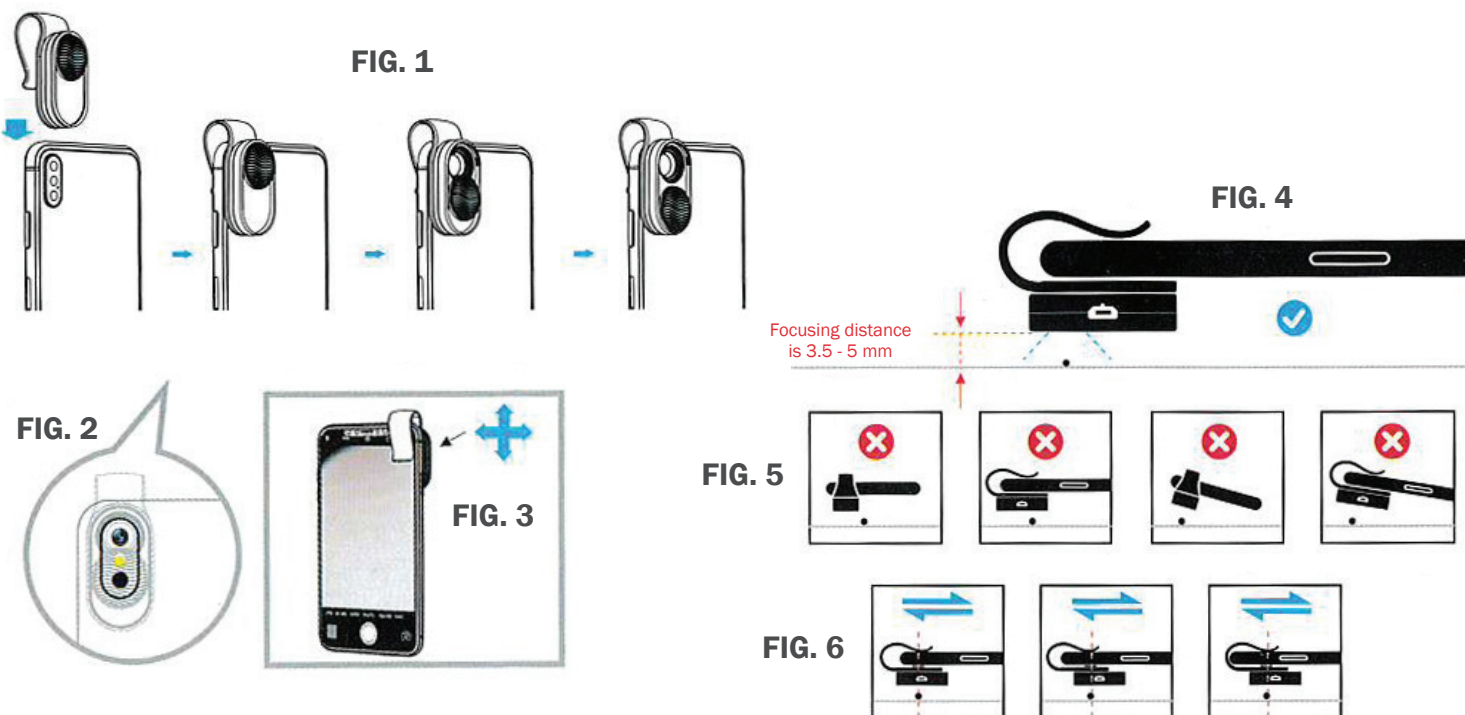


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UNIVERSAL CLIP-TYPE LED CELLPHONE MICROSCOPE



INSTALLATION AND USE OF UNIVERSAL CLIP-TYPE MICROSCOPE:

1. Adjust microscope clip onto your phone camera, keep the microscope lens aligned with your phone's main camera (FIG. 2).
2. Slide lens cover to bottom to turn on LED (FIG. 1), then you're ready to shoot.
3. You can keep the lens cover from sliding into the middle of the microscope. At this stage, the LED switch will not be triggered. You can see and align the phone main camera through the microscope lens (FIG. 2).
4. If you find dark corners on your shooting screen, that means you have not really aligned. Move the microscope slightly to adjust alignment (FIG. 3).

OPERATING INSTRUCTION OF MICROSCOPE:

1. Keep mobile phone and the microscope in a horizontal or vertical direction for shooting. The best focusing distance is 3.5 mm to 5 mm (FIG. 4).
2. Do not tilt the phone and microscope in during shooting (FIG. 5).
3. The microscope can slide to adjust. The location of the main camera of each smart phone is different. Follow diagram to adjust (FIG. 6).

CHARGING INSTRUCTIONS:

1. When the LED flashes at 15 second intervals, the device is in a low power state.
2. Connect cable and micro USB port and plug other side into the power.
3. The red light is on when it's charging, then green when it's completely charged.



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RTi Compressed Air Audit Sheet

Company Name: _____ Date: _____
Address: _____ Email: _____
City, State, Zip Code: _____ Distributor: _____
Phone: _____ Contact Person: _____

Air Compressor:

Size (HP): _____
Tank (Gal): _____
Type: _____
Drained: Y N (circle one)
When: _____
How often: _____

Piping, Hoses & Couplers:

Material Type: _____ Hose Size: 1/4" 15/16" 3/8"
Size: _____
No. of Drains/Drops: _____
Filtered: Y N (circle one)
System: Dead End or Loop (circle one)
ACFM Requirements: _____
ACFM: _____

Filters:

Brand you're using:

| | | |
|-------------------------------|----------------------------|------------------|
| Refrigerated Dryer: Y N _____ | Drained: Y N (circle one) | How Often: _____ |
| Filter Elements: Y N _____ | Date of Last Change: _____ | How Often: _____ |
| Desiccant Dryers: Y N _____ | Date of Last Change: _____ | How Often: _____ |
| Gun Filters: Y N _____ | Date of Last Change: _____ | How Often: _____ |

Air Tests:

| | |
|---------------------------------------|---------------------------------------|
| Location: _____ | Location: _____ |
| Compressed Air Dew Point: _____ | Compressed Air Dew Point: _____ |
| Compressed Air Humidity @ 70°F: _____ | Compressed Air Humidity @ 70°F: _____ |
| Contaminants: _____ | Contaminants: _____ |
| Type: _____ | Type: _____ |
| Air Flow Test (Pass/Fail): _____ | Air Flow Test (Pass/Fail): _____ |

Recommendations:

Name of Representative: _____ Date: _____

***In order to make our air audit procedures more efficient and provide more in depth results for the shops, you can download an app on your phones called "Calculator of Air". You need to input 2 lines. The first is temperature which will always be 70° F (paint company recommended temperature). The second is the dew point from your QAT tester. Push enter and you will see the wet bulb number. This is a more accurate reading for the compressed air humidity percentage (CAH).*



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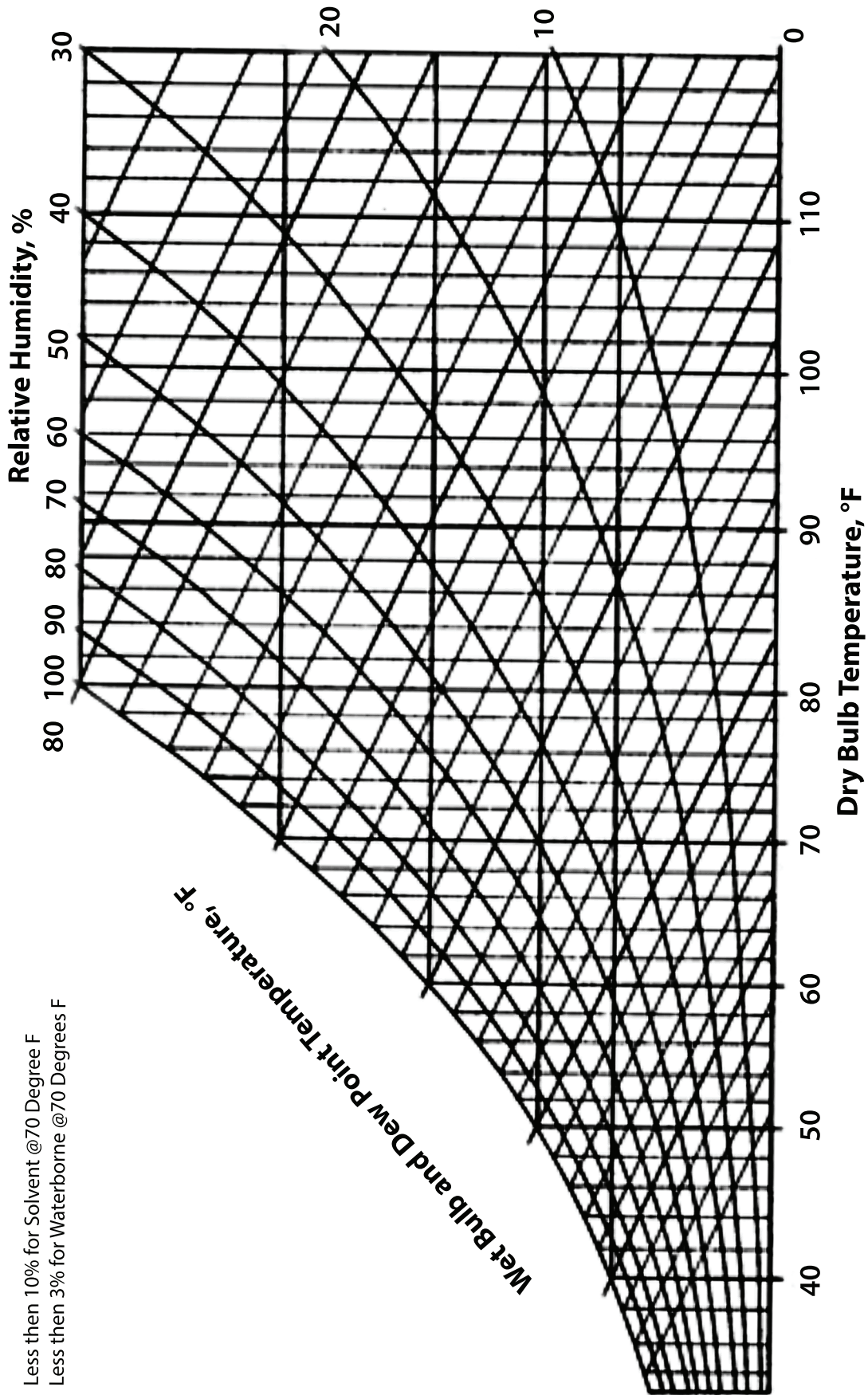
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Less than 10% for Solvent @70 Degree F
Less than 3% for Waterborne @70 Degrees F

Wet Bulb and Dew Point Temperature, °F



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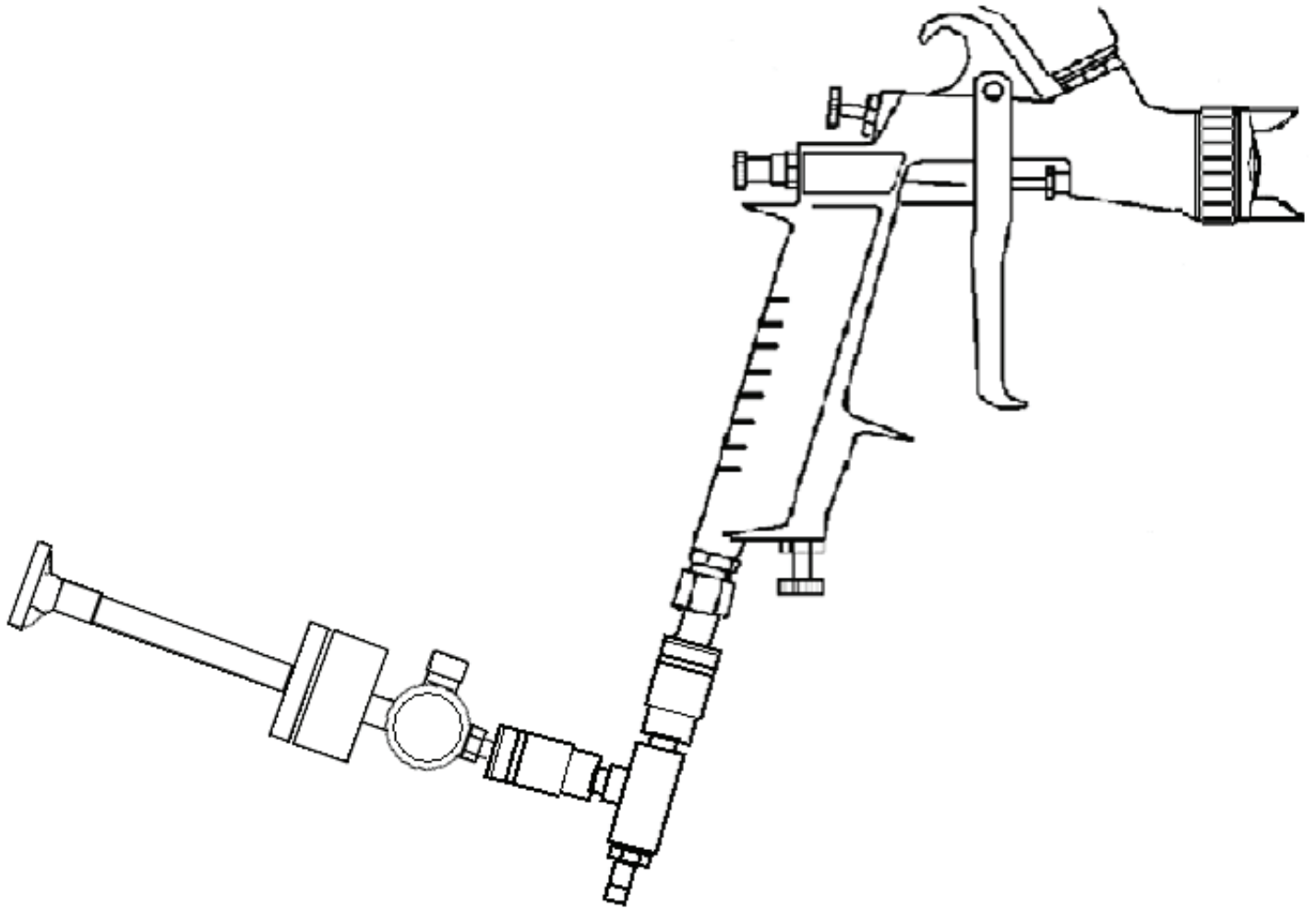
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PROPER HOOKUP FOR TESTING MEMBRANE UNITS

Membrane units sold in the market have not been able to keep up with the air used when spraying paint. Because of this we are recommending doing the compressed air humidity test. Refer to the previous pages on how to test.

This reading will give you an accurate reading of compressed air humidity that is produced while spraying paint.

Most units we have tested in the field range from 5-15% suppression from incoming CAH into the membrane dryer. Average shop reading are around 38%, meaning these units are not performing to meet paint company specifications.



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