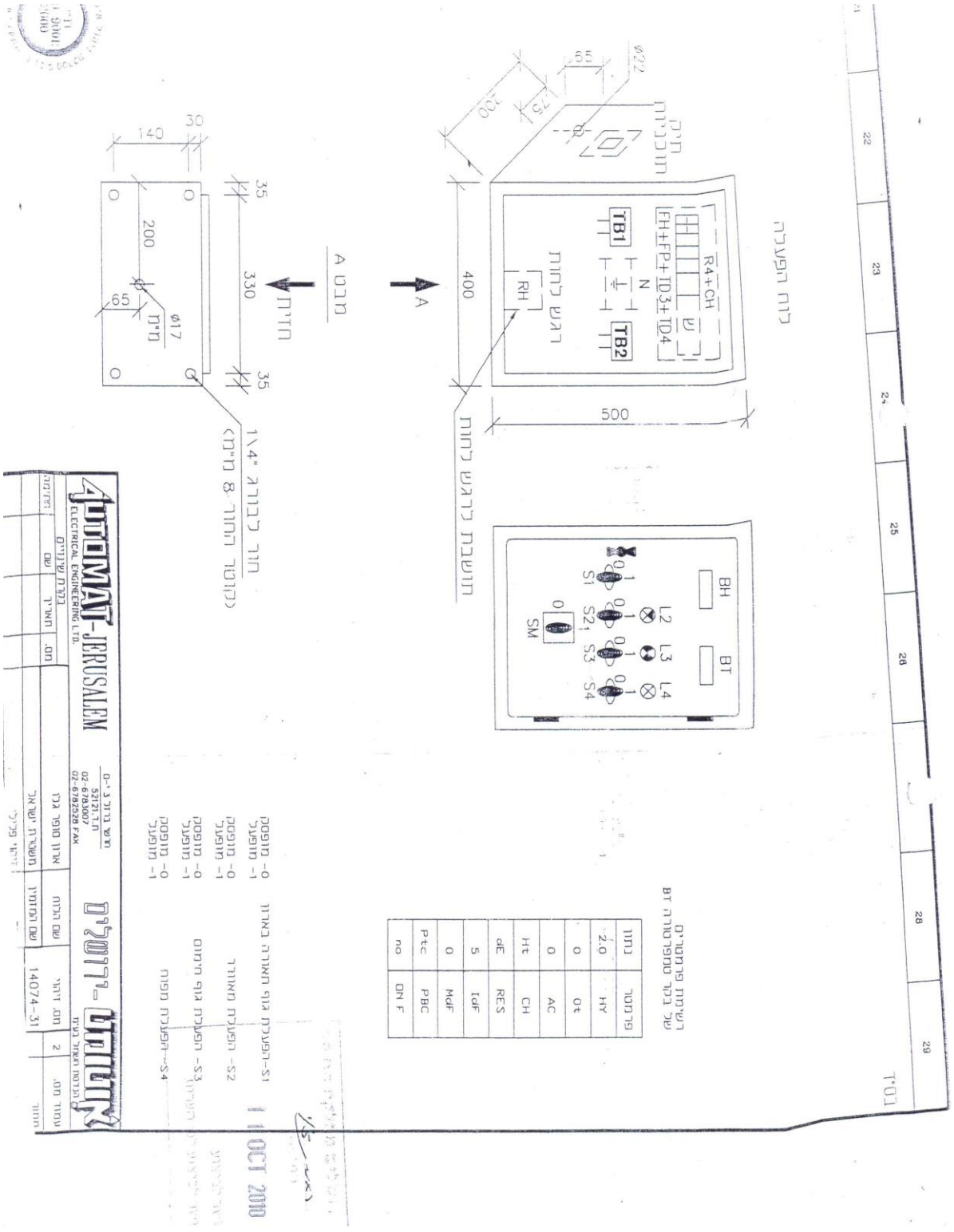
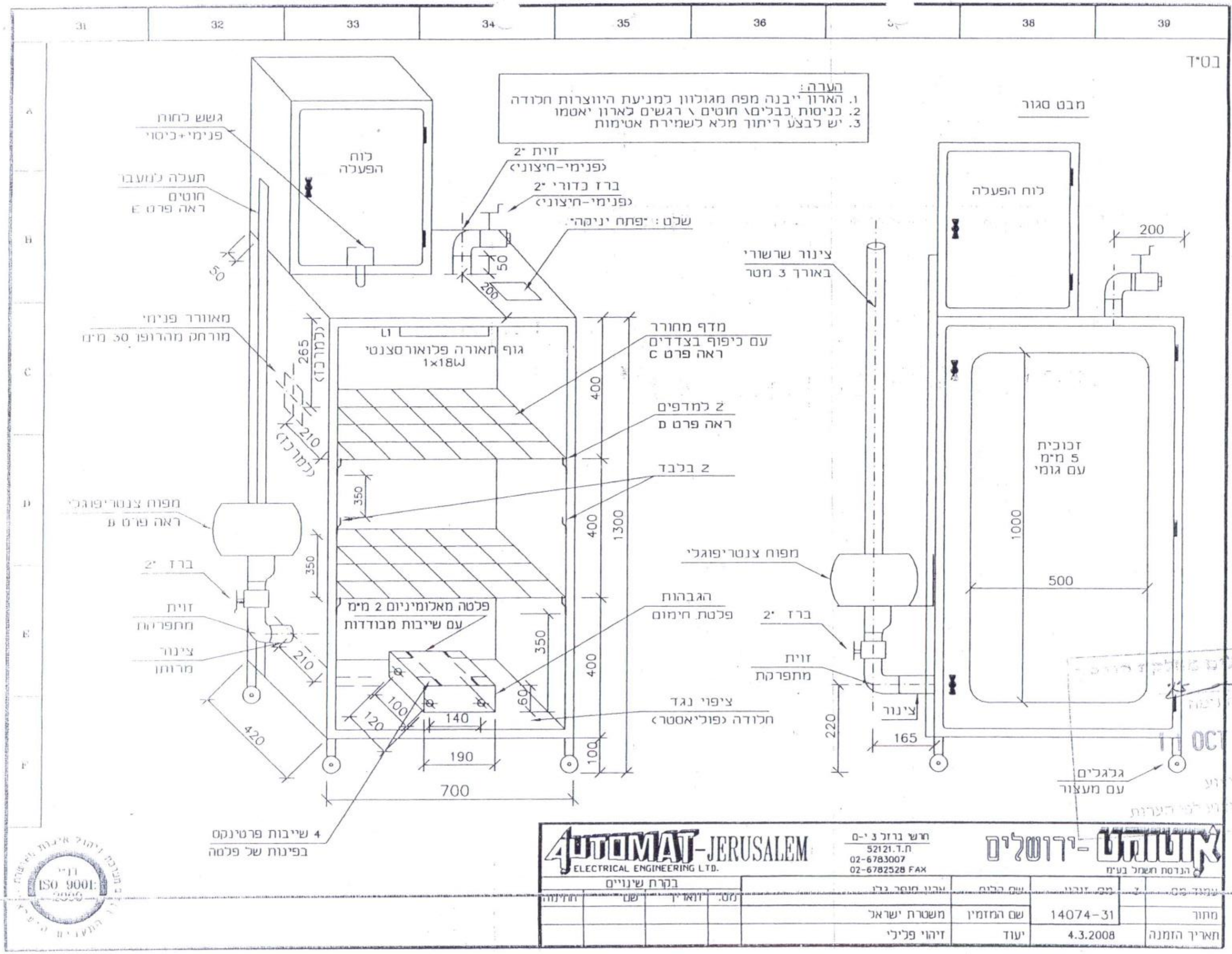
נספח 2

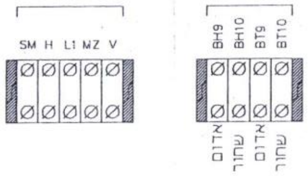
שרטוטים טכניים ורשימת הפריטים המרכיבים את הארון של חברת "אוטומט" ומדריך משתמש לארון של חברת "Airscience"




בס"ד
הערה:
1. הארון ייבנה מפח מגולוון למניעת היווצרות חלודה
2. כניסות כבלים, חוטים \ רגשים לארון יאטמו
3. יש לבצע ריתוך מלא לשמירת אטימות
מבט סגור
לוח הפעלה
גשש לחור
פנימי+כיסוי
תעלה למעבר
חוטים
ראה פרט E
זוית 2"
(פנימי-חיצוני)
ברז כדורי 2"
(פנימי-חיצוני)
שלט: "פתח ניקוי"
מאוורר פנימי
מורחק מהרופן 30 מ"מ
גוף תאורה פלואורסצנטי
1×18W
מדף מחורר
עם כיפוף בצדדים
ראה פרט C
2 למדפים
ראה פרט D
2 בלבד
מפוח צנטריפוגלי
ראה פרט B
ברז 2"
זוית
מתפרקת
צינור
מרותך
פלטה מאלומיניום 2 מ"מ
עם שייבות מבודדות
הגבהות
פלטת חימום
ציפוי נגד
חלודה (פוליאסטר)
4 שייבות פרטינקס
בפינות של פלטה
צינור שרשורי
באורך 3 מטר
זכוכית
5 מ"מ
עם גומי
גלגלים
עם מעצור
AUTOMAT-JERUSALEM
ELECTRICAL ENGINEERING LTD.
אוטומט-ירושלים
הנדסת חשמל בע"מ
חרש ברזל 3 י-ם
52121.ד.ת
02-6783007
02-6782528 FAX
בקרת שינויים
14074-31
4.3.2008
משטרת ישראל
זיהוי פלילי
שם המזמין
יעוד
מחור
תאריך הזמנה
11 OCT 2010
ISO 9001

בס"ד

סרגל מהדקים



AUTOMAT-JERUSALEM ELECTRICAL ENGINEERING LTD.

חרש ברזל 3 י-ם
ת.ד. 52121
02-6783007
02-6782528 FAX

אוטומט-ירושלים
הנדסת חשמל בע"מ

בקרת שינויים								
חתימה	שם	תאריך	מס.	ארון סופר גלו	שם הלוח	מס. זיהוי	4	עמוד מס.
				משטרת ישראל	שם המזמין	14074-31		מחור
				זיהוי פלילי	יעוד	4.3.2008		תאריך הזמנה

אוטומט ... מחלקת הנדסה
11 OCT 2010
... לביצוע
... לביצוע לפי הערות

51	52	53	54	55	56		58	59

בס"ד

רשימת ציוד

כמות	תאור הפריט	הפריט
1	ממסר פיקוד 230V 14 פין	R4
1	צינור פלסטי 2"	
1	מעבר פלסטי מ-2" ל-4"	
1	זוית 2" (פנימי-חיצוני)	
2	ברז כדורי 2" פנימי-חיצוני	
1	זוית 2" (פנימי-פנימי)	
1	מופה 2"	
1	צינור 2" אורך 120 מ"מ	

רשימת ציוד

כמות	תאור הפריט	הפריט
1	תקע 1x16A	T
4	מפסק OFF-ON (1-0) CROMPTON GRAVES ø 22	S1-S4
1	מפסק OFF-ON (1-0) 1x16A (1-0) A.B.	SM
1	גוף תאורה פלורסצנטי 1x18W	L1
1	מפוח צנטריפוגלי 230V 1PH 50HZ 60W 270 m3/H IPX4 VENTS	MZ
1	מאוורר 4" 50HZ 19W PDS-120-38 SALZER N.D.S	V
1	טיימר 30-0 דקות RSKZ PSK מצא 230VAC בקרה	TD4
1	ממסר השהיה בניתוק 30-0 דקות LSK PSK מצא 230VAC בקרה	TD3
4	גוף חימום 10W 230V (מק"ט 4008018) RC016 STEGO	GH
1	מנורת סימון אדומה 22ø LED 230V	L3
1	מנורת סימון צהובה 22ø LED 230V	L2
1	מנורת סימון ירוקה 22ø LED 230V	L4

רשימת ציוד

כמות	תאור הפריט	הפריט
3 מטר	כבל פנדל 3x2.5ø	
1	מא"ז DX 1x10A-B LEGRAND	FH
1	מא"ז DX 1x6A-B LEGRAND	FP
1	מגען AC1 3x20A GMC-9 L.G.	CH
1	בקר טמפ' 5POC1 230V XR20CX כולל רגש טמפ' PTC סיליקון עד 150°C DIXEL	BT
1	בקר לחות 230V XT110C 5HOHU DIXEL	BH
1	רגש לחות 9-20 VDC XH 20P DIXEL	RH
4	גלגלים	

11 OCT 2010

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ELECTRICAL ENGINEERING LTD.
רח' נרזל 3 ת.ד. 52121
02-6783007
02-6782528 FAX
אוטומט-ירושלים
הנדסת חשמל בע"מ

עמוד מס.	5	מס. זיהוי	שם הלוח	ארון סופר גלו
מתוך		14074-31	שם המזמין	משטרת ישראל
תאריך הזמנה		4.3.2008	יעוד	זיהוי פנימי

בקרת שינויים			
מס.	תאריך	שם	חתימה

ISO 9001:2000

תרמוסטט XR20CX

הוראות הפעלה והתקנה

אמצעי בטיחות

- לפני כל חיבור או כל פעולת אחזקה יש לוודא ניתוק המכשיר מזרם החשמל
- יש לבדוק לפני החיבור שאספקת החשמל אכן מתאים למכשיר
- יש לבדוק את גבולות היישום שלכם לפני השימוש במכשיר
- אין לחשוף את המכשיר למים או לחות
- יש להשתמש במכשיר רק בסביבת עבודה המתאימה לו, יש להימנע משינויי טמפרטורה פתאומיים במצב של לחות גבוהה כדי למנוע היווצרות אדים.
- אין לפתוח את גוף המכשיר

נתונים טכניים

מארז: כיבוי עצמי

מידות: 70x28.5 מ"מ, עומק 60 מ"מ

טמפרטורת איחסון: -25÷60 °C

תחום מדידה: בהתאם לסוג הרגש
רגש S6- כבל שחור- חוטים כחול/חום : -30÷80 °C
רגש S6SH- כבל אפור- חוטים לבן/אדום : -55÷150 °C
רגש NS6- כבל אפור- חוטים כחול/חום : -30÷80 °C
רגש NG6- כבל שחור- חוטים דקים עד הקצה : -40÷110 °C

תנאי עבודה: טמפ': 0÷60 °C
לחות : 20÷85% (ללא עיבוי)

סימוני התצוגה

סימון	מצב	פעולה
❄	דולק	מגע סגור (מדחס בפעולה)
❄	הבהוב	השהיית המגע (להגנת המדחס)
❄	דולק	שלב הפשרה
❄	דולק	מצב אזעקה

סימון	מצב	פעולה
❄	דולק	הקפאה מהירה
◑	דולק	מצב חיסכון באנרגיה מופעל
°C/°F	דולק	יחידת מדידת הטמפרטורה
°C/°F	הבהוב	שלב תכנות

רשימת הפרמטרים הבסיסיים

HY	דיפרנציאל (0.1 ℃ ← 25.5℃) הפרש בין ה-SETPOINT לבין הטמפרטורה בה המגע נסגר (המדחס מתחיל לפעול)
Ot	כיול רגש התרמוסטט (-12.0 ℃ ← 12.0 ℃)
AC	הגנה על המגע (0 ← 50 דקות) משך הזמן המינימלי בין ניתוק המגע לבין הפעלתו מחדש.
CH	סוג יישום: CL = קירור Ht = חימום.
rES	דיוק: in = בלי נקודה עשרונית dE =עם נקודה עשרונית

שני הפרמטרים הבאים מתייחסים לטיימר הפשרה, פונקציה זו מנוטרלת אך ניתן להפעילה דרך הפרמטרים IdF, MdF:

IdF	רווח זמן בין מחזורי הפשרה: (0 ← 120 שעות)
MdF	משך זמן מקסימלי של הפשרה: (0 ← 255 דקות) – 0 : ביטול פונקצית ההפשרה
Pbc	בחירת סוג הרגש: Ptc או ntc הרגש המסופק הינו מסוג PTC אך כאשר רוצים להשתמש ברגש NTC שכבר מותקן, יש לשנות פרמטר זה
onF	שימוש בכפתור on/off nu = לא פעיל Off = פעיל

איתות לתקלות

הודעה	סיבה	מצב היציאות	הפסקת ההתראה
P1 מהבהב	תקלה ברגש התרמוסטט	המגע מופסק	מיד עם חזרת הרגש לפעולה תקינה

איתותים נוספים

הודעה	סיבה
POF	מקשים נעולים
POn	מקשים משוחררים
noP	במצב תכנות : לא קיים פרמטר ב-Pr1 בתצוגה : הרגש שנבחר אינם קיים
noA	לא נרשמו אזעקות

תרמוסטט XR20CX

הוראות תיכנות

איך בודקים מה ה-SETPOINT (טמפרטורת היעד) ?

SET לחץ על מקש SET לשניה אחת.

איך משנים את ערך ה-SETPOINT ?

עליך ללחוץ על מקש SET במשך 4 שניות. האות °C (או °F) מהבהבת.
בעזרת מקש ▲ או ▼ ניתן לשנות את הערך הקיים.
לאחר 15 שניות או לאחר לחיצה על מקש SET הערך החדש ירשם בזיכרון.

איך משנים ערך של פרמטר

לחיצה בו זמנית על ▼ + SET מאפשרת כניסה לפרמטרים.
הפרמטר הראשון Hy יופיע על הצג.

לחיצה על מקש ▼ או ▲ מאפשרת לדפדף בין כל הפרמטרים (ראה רשימה בהמשך).
בכל פרמטר נתון, לחיצה על מקש SET מציגה את הערך הקיים. שינוי הערך יתבצע על ידי החצים.
קליטת הנתון החדש מתבצעת על ידי לחיצה על מקש SET (במקרה זה הנתון יהבהב והפרמטר הבא יופיע) או על ידי המתנה של 15 שניות (במקרה זה הנתון נקלט והמכשיר יוצא ממצב תכנות באופן עצמאי).

נעילה ושיחרור מקשים (במידת הצורך)

נעילת המקשים

יש ללחוץ בו זמנית על המקשים ▼ + ▲ למשך 4 שניות.
הודעה POF תהבהב לאישור הנעילה.

שחרור המקשים

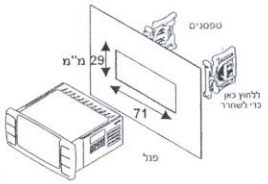
יש ללחוץ בו זמנית על המקשים ▼ + ▲ למשך 4 שניות.
הודעה Pon תהבהב לאישור השחרור.

התקנה וחיבורים

⚠ לפני כל חיבור או כל פעולת אחזקה נא לוודא ניתוק המכשיר מזרם החשמל

התקנת המכשיר

יש להתקין את המכשיר על פנל אנכי (חתך של 29x71 מ"מ)
ולקבע אותו בעזרת 2 הטפסנים מפלסטיק. יש להימנע מלהתקין את
המכשיר באזור עם תנאים קיצוניים (רעידות חזקות, גזים חריפים,
ליכלוך או לחות גבוהה). אין לכסות את פיתחי האיוורור של המכשיר.



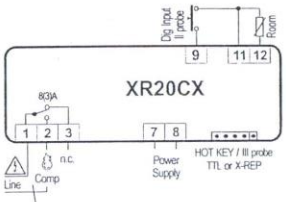
התקנה וחיבור הרגש

יש להתקין את הרגש עם הראש כלפי מעלה כדי למנוע נזקים כתוצאה
מחדירת נוזלים. מומלץ להתקין את הרגש הרחק מזרימת אויר כדי
שהמדידה תשקף את טמפרטורת החדר הממוצעת.
יש לחבר את הרגש בהתאם לסימונים על תוית המכשיר.
מומלץ להתקין את הרגש הרחק מהישג ידיו של המשתמש הסופי.
ניתן להאריך את הרגש באמצאות כבל מסוכך (יש להרחיקו מכל מקור מתח) .

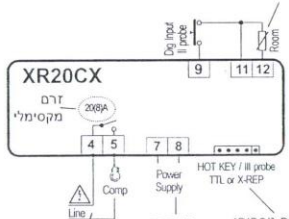
חיבורים חשמליים

- אנא בדקו לפני החיבור שאספקת המתח אכן מתאים למכשיר
- יש לבצע את כל החיבורים **בהתאם לסכמת החיבורים על גוף המכשיר**
- יש לשים לב לזרם המקסימלי שניתן להעמיס על כל מגע
- יש לודא שכל החוסים החשמליים (רגשים, מתח...) מופרדים ומבודדים אחד מהשני.
- במקרה של יישומים בסביבה תעשייתית, שימוש בפילטר יכול להועיל

חיבור רגש התרמוסטט
11 ו-12



חיבור המגע:
1 פאזה נכנסת
2 פאזה יוצאת



חיבור המגע:
4 פאזה נכנסת
5 פאזה יוצאת

אספקת חשמל

חיבורים נוספים:
רגש שלישי
או מפתח תיכנות
או תצוגה מרוחקת
או תקשורת

לאחר השלמת כל החיבורים וחיבור המכשיר לחשמל, תופיע הטמפרטורה על גבי הצג.

תרמוסטט לחות XT110

_ ⚠ .לפני כל חיבור או כל פעולת אחזקה נא לוודא ניתוק המכשיר מזרם החשמל

לאחר חיבור הבקר לחשמל, תופיע רמת הלחות בחדר על גבי הצג.

-אם ברצונך לבדוק מהי נקודת הקביעה, לחץ על מקש SET

-כדי לשנות את נקודת הקביעה (רמת הלחות הרצויה בחדר):
עליך ללחוץ על מקש SETבמשך 3 שניות. נוריות הביקורת על יד הספרה הראשונה והשלישית מהבהבות. בעזרת המקשים ∧ ∨ ניתן לשנות את נקודת הקביעה. לאחר 15 שניות או לאחר לחיצה על מקש SET הנתון החדש ירשם בזיכרון.

כניסה לפרמטרים

לחיצה בו זמנית על ∨ + SET מאפשרת כניסה לפרמטרים.

חשוב: ברגעים הראשונים לאחר הדלקת המכשיר,הכניסה לפרמטרים מתבצעת ישירות ל PR2 .
ב- PR2 מופעים כל הפרמטרים. אין להתייחס לפרמטרים שאינם מופיעים ברשימת הפרמטרים.

רשימת הפרמטרים

דיפרנציאל (HY1):הפרש בין נקודת הקביעה (SET POINT) והלחות בה הבקר עובר למצב ON.

LS1 גבול תחתון של SET1.

US1 גבול עליון של SET1.

S1Cסוג פעילות: INV = חימום / לחות, DIR = קירור / יבוש .

LCI תחילת התחום עבור בקרים עם כניסות זרם או מתח. הערך שייקבע יהיה שווה ל 4mA או 0V.

UCI סוף התחום עבור בקרים עם כניסות זרם או מתח. הערך שייקבע יהיה שווה ל 20Ma או 10V.

Opb כיול התרמוסטט:(-999^0C ← $+999^0C$)

PbC בחירת סוג רגש:
cur= 4 .. 20 mA
v=0-1 0-1
v=10 0..10

נעילה / שחרור מקשים

יש ללחוץ בו זמנית על המקשים ∧ ו- ∨ למשך 4 שניות.
הודעה POF לאישור הנעילה. הודעה Pon לאישור השחרור.

חיבור לרגש לחות

רגש	בקר
1	10
2	9

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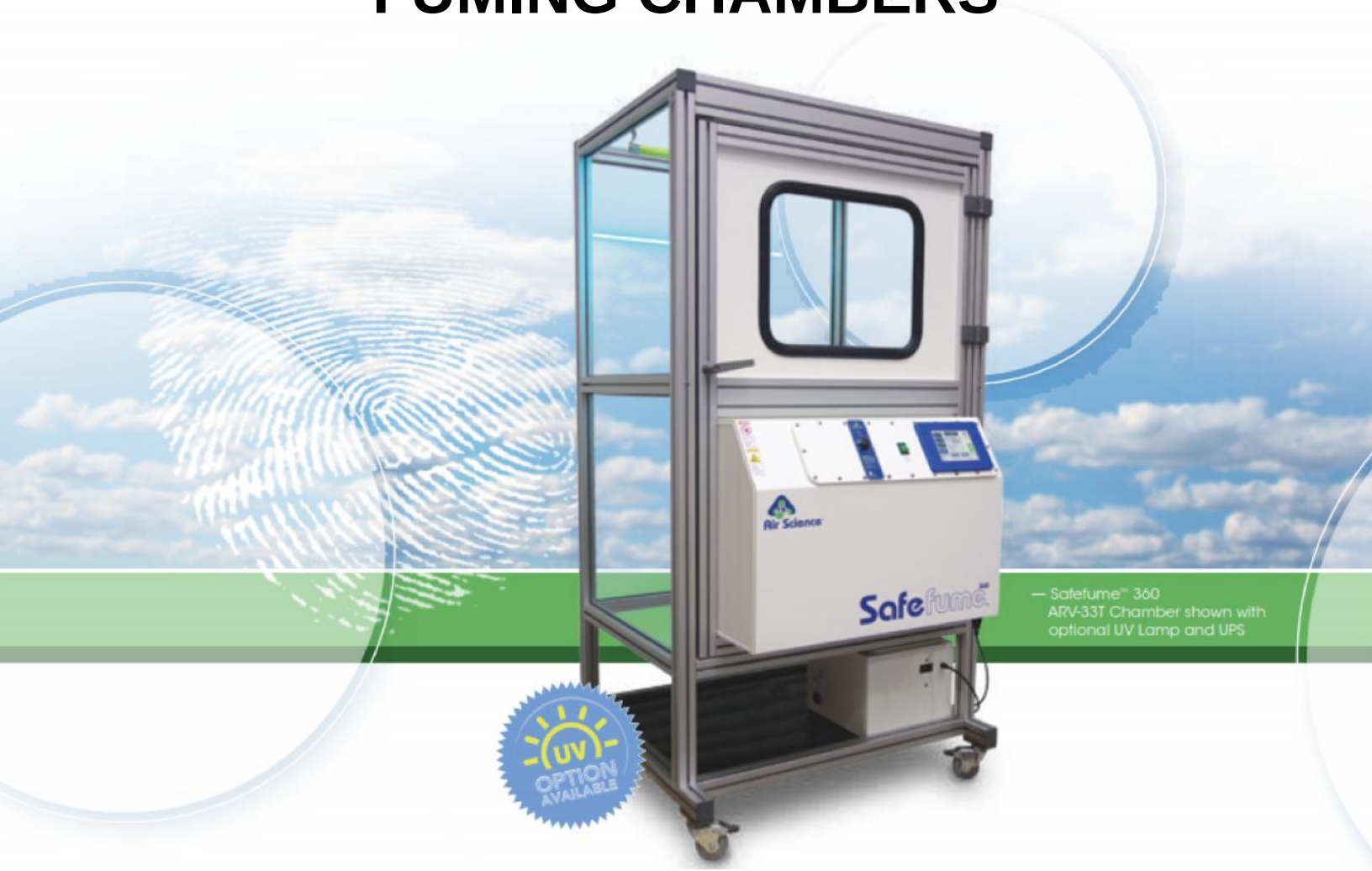
CYANOACRYLATE
FUMING CHAMBERS



— Safefume™ 360
ARV-33T Chamber shown with
optional UV Lamp and UPS

USER OPERATION MANUAL

Air Science Manual Revision No. SAFEFUME360.V2.2015
Specifications subject to change without notice.

Air Science™

TABLE OF CONTENTS

SAFETY WARNINGS

- This cabinet does not offer product and/or sample protection.
- Read all instructions before proceeding and observe the installation procedure and environmental/electrical requirements
- Anyone working with, on or around this equipment should read this manual. Failure to read, understand and follow the instructions given in this documentation may result in damage to the unit, injury to operating personnel, and / or poor equipment performance.
- Any internal adjustment, modification or maintenance to this equipment must be undertaken by qualified service personnel.
- The use of any hazardous material in the cabinet must be monitored by an industrial hygienist, safety officer or some other suitably qualified individual.
- Explosive or inflammable substances should never be used in the cabinet unless a qualified safety professional has evaluated the risk involved.
- If chemical, radiological or other non-microbiological hazards are being used in the cabinet, additional protective measures should be taken. Besides that, the operation should be monitored by a suitably trained individual.
- Before you proceed, you should thoroughly understand the installation procedures and take note of the environmental/electrical requirements of the cabinet.
- In this manual, important safety related points will be marked with this symbol.

- If the equipment is used in a manner not specified by this manual, the protection provided by this equipment may be impaired.

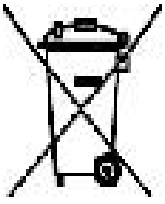
LIMITATION OF LIABILITY

The disposal and / or emission of substances used in connection with this cabinet may be governed by various local regulations. Familiarization and compliance with any such regulation are the sole responsibility of the users of the cabinet. Air Sciences' liability is limited with respect to user compliance with such regulations.

EUROPEAN UNION DIRECTIVE ON WEEE AND RoHS

The European Union has issued two directives:

• Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE)



The objective of the WEEE directive is to promote "….the reuse, recycling and other forms of recovery of such wastes (WEEE) so as to reduce the disposal of waste besides improving the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers…." and hence this directive refers to the disposal of this cabinet within the EU. A "wheelie bin" sticker *(shown alongside)* has to be pasted on all products covered by this directive, indicating that at the time of disposing of the product, it should not be grouped together with general unsorted municipal waste. Instead, distributors of electrical and electronic equipment should be responsible for the collection and scrapping of the products they have sold Please note that this cabinet has been classified as "fixed industrial equipment" and hence the WEEE directive is not applicable to its disposal.

• **Directive 2002/95/EC on Restriction on the use of Hazardous Substances (RoHS)**
With respect to the directive on RoHS, please note that this cabinet falls under category 9 *(monitoring and control instruments)* and is therefore exempted from requirement to comply with the provisions of this directive.

SYMBOLS

Warning of hazardous area or situation

Warning of dangerous electric voltage

Earth (ground) protective conductor

Local government may require proper lamp disposal

FREIGHT CLAIM INFORMATION

Air Science inspects each product for defects before shipment. Air Science products are then carefully packed in compliance with carrier regulations and thoroughly inspected before leaving our plant. Responsibility for their safe delivery is assumed by the carrier upon acceptance of the shipment. Occasionally damage occurs in transit. Claims for loss or damage sustained in transit must be made upon the carrier.

Please remember that you are responsible for all freight claims and the cost of all replacement pieces for each shipment you accept. Inspect each shipment very carefully before acceptance.

Carefully inspect each pallet or crate upon arrival. If a shipment is found to be damaged upon delivery, be sure to have the driver/carrier note all damage details on the delivery receipt.

This is essential or your claim may be denied. Also if pallets are stacked, please note "Stacked Pallets" on the delivery receipt (pallets are not stacked when shipped, unless otherwise stated for certain products). Air Science is not responsible for pallets stacked at carrier terminal. Any unloading difficulties or damages due to stacked materials are carrier's responsibility.

If freight damage is discovered, please refer to the following guidelines in order to process and effective freight claim:

ACCEPTED FREIGHT WITH NOTED/VISIBLE LOSS OR DAMAGE

- Any external evidence of loss or damage must be noted on the freight bill or delivery receipt and signed by the courier's agent or delivery driver

NOTE: Failure to properly describe evidence of loss or damage may result in the carrier refusing to honor a claim

- Contact delivering terminal to arrange for a claim form and inspection report to be faxed or mailed to you
- Notify Air Science regarding which items need replacement
- Keep all damaged items and packing material until claim is resolved between you and the carrier

ACCEPTED FREIGHT WITH CONCEALED LOSS OR DAMAGE

When a damage or loss is discovered during unpacking:

- Contact the carrier immediately upon discovery of damage and request for inspection by the carrier's agent.
- Carrier will determine inspection needs based on value and time elapsed
- Notify Air Science regarding which items require replacement
- Air Science will fax to you an order acknowledgment that includes value of items for claim (less freight amount)
- Air Science will invoice you for replacement materials
- Air Science standard payment terms will apply

UNACCEPTED FREIGHT

- If substantial damage is noted upon inspection you have the right to refuse part or all of a shipment. Do not unpack pallets or crates with damaged materials. Individual items cannot be refused. You must refuse the entire pallet or accept the freight with noted damage (see above)
- Air Science will handle all freight claim procedures and process a replacement order for your company for the damaged pieces at no charge. (if the original order was shipped under CIF terms i.e. Air Science had covered the insurance)

NOTE: Any correspondence with Air Science regarding loss or damage must be accompanied by a copy of the shipping carrier's report. Air Science will not accept returns that have not been authorized.

In the event of accepted freight with damage or loss, notification of loss or damage must be sent to the carrier within 10 days of receiving the freight. Notification outside the 10-day time frame may result in shipping damage claim being denied.

WARRANTY TERMS AND CONDITIONS

Air Science value your business, so your satisfaction is important to us, so please complete and return our customer satisfaction survey at the end of this manual.

Should you be unfortunate to receive product that appears to be damaged or defective or does not appear to be working satisfactorily, then please contact our experienced technicians for assistance at the address shown at the foot of this page.
The Air Science range of cabinets has been carefully designed to produce a system that will provide product safety in an easy to use system. However, basic safety precautions should always be followed when:

- ❑ Using an electrical product; and
- ❑ Handling hazardous substances.

Air Science products come with a 2-year limited warranty beginning on the date of shipment from the Air Science. Air Science's limited warranty covers defects in materials and workmanship. Air Science's liability under this limited warranty shall be, at our option, to repair or replace any defective parts of the equipment, provided if proven to the satisfaction of Air Science that these parts were defective at the time of being sold. This limited warranty does not cover:

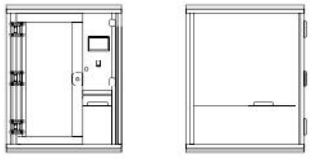
- ❑ Installation (inside delivery handling) damage.
- ❑ Products with missing or defaced serial numbers
- ❑ Consumables such as filters (HEPA, ULPA, carbon, pre-filters) and fluorescent / UV bulbs
- ❑ Problems that result from:
  - External causes such as accident, abuse, misuse, problems with electrical power, improper operating environmental conditions
  - Servicing that is not carried out by Air Science personnel or their appointed agents, or in the case of electrical work by a qualified electrician
  - Usage that is not in accordance with these product instructions
  - Failure to follow these product instructions
  - Failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied or approved by Air Science
  - Damage by fire, floods, or acts of God
  - Customer modifications to the product

ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN TIME TO THE TERM OF THIS LIMITED WARRANTY. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. AIR SCIENCE DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST WORK. AIR SCIENCE LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH AIR SCIENCE IS RESPONSIBLE. FLORIDA LAW GOVERNS THIS WARRANTY

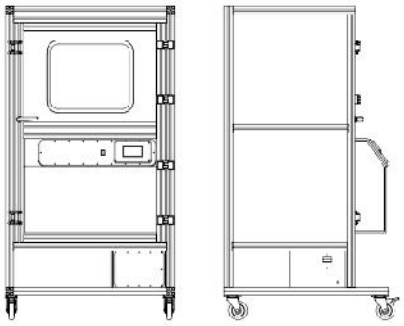
CHAPTER I

PRODUCT INFORMATION

Safefume™ Cyanoacrylate fuming chambers are designed to safely develop latent fingerprints using ethyl cyanoacrylate (CNA) vapor in a controlled environment for optimum effectiveness and safety where moisture and fuming time are critical factors. The tamper resistant compartment helps maintain the chain of custody. The unique Air Science Multiplex™ filtration system, together with professional design and unique construction features offer personnel protection during use.



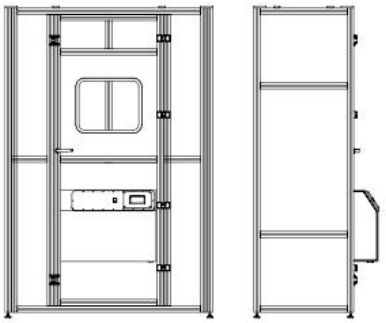
ARV-24 (side view)



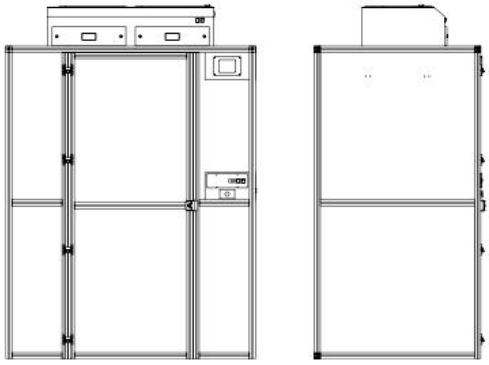
ARV-33T (side view)

MODEL	DIMENSIONS			WEIGHT (lbs/Kg)	
	Internal Height	External (W x D x H)	Shipping (W x D x H)	Net	Ship
Safefume 360 Models					
ARV-24	27.5" 699 mm	24" x 25" x 30" 610 x 635 x 762 mm	30" x 34" x 38" 762 x 864 x 965 mm	83 / 38	125 / 57
ARV-33T	50" 1270 mm	33" x 34" x 70" 838 x 864 x 1778 mm	39" x 43" x 78" 991 x 1092 x 1981 mm	291 / 132	331 / 150
ARV-60T	82" 2083 mm	60" x 29" x 87" 1524 x 737 x 2210 mm	66" x 44" x 95" 1676 x 1118 x 2413 mm	390 / 177	449 / 204
ARV-72XL	80" 2032 mm	72" x 48" x 86" 1829 x 1219 x 2184 mm	80" x 54" x 95" 2032 x 1372 x 2413 mm	825 / 374	968 / 439

Specifications are subject to change without notice.



ARV-60T (side view)



ARV-72XL (side view)

PRODUCT SPECIFICATIONS

Safefume 360 Models	ARV-24	ARV-33T	ARV-60T	ARV-72XL
Construction	<··· Aluminum frame with tempered glass and door with key locks and tamper-proof seals. Hanging rail. ···>			
Blower	<··· ebmpapst™ centrifugal fan. ···>			
Electrical Switches	<··· Main On/Off ···>			
Monitoring	<··· Complete monitoring of all functions. ···>			
Hanging Rods	1	2	2	2
Shelves	1	1	3	-

Filter Specifications

Pre-Filter	<··· Electrostatic ···>
Main Filter	<··· Carbon ···>

CHAPTER II

UNPACKING YOUR CABINET

This chapter aims to provide relevant information on how to handle the cabinet properly upon receipt. Failure to follow the following instructions may damage the cabinet. We strongly advise you to read this chapter carefully before proceeding further.

2.1 STEP-BY-STEP PROCEDURE

1. Inspecting the crate, pallet, boxes
   Upon receipt of your new cabinet, inspect all cartons. If there is any visible damage to the exterior please refer to freight claim information.
2. Moving the Pallet
   - The pallet is designed to protect our cabinet from any foreseeable circumstances. However, excessive impact onto the boxes or pallet may also damage the cabinet. Prevent any direct impact or hitting to the pallet when moving.
   - b. When lifting the pallet, please always ensure that the floor jack or mechanical lift truck has always entered fully under the pallet in order to achieve stability. Failure to do so will increase the risk of the pallet falling off the floor jack or mechanical lift truck during handling. Please use a suitable extension bar when the situation arises.
3. Opening the Boxes
   - If you did not receive one or more of the parts listed on the packing checklist, or if any of the items are damaged, please contact your distributor or Air Science immediately for further instructions.
4. Removing the packaging material
   - The cabinet is protected by Styrofoam, cardboard, and or and shrink-wrap.
   - If you find any damage during this stage of unpacking please refer to freight claim information.
   - t is the best practice to leave the cabinet secured with straps to the pallet until the cabinet is located in its approximate final position to facilitate ease and safety in handling.

Choosing the best location for your cabinet in order to achieve optimum operating performance of your cabinet is determined by a number of factors. Please refer to the next chapter for some guidelines.

5. Moving the cabinet
   - When lifting the pallet with the cabinet, please always ensure that the floor jack or mechanical lift truck has always entered fully under the pallet. This is to increase the stability of the cabinet and reduce the risk of the cabinet falling down. Please use extension bar when necessary. During the moving of the cabinet, please ensure there is enough distance between the supports of pallet and the ground. Dragging the pallet against the ground (at one side or otherwise) will damage the pallet and possibly your new cabinet.
6. Removing the strapping
   - Remove the strapping by cutting it at a safe position to prevent any scratch on the surface of your new cabinet.
   - Do not discard the packaging material for your cabinet until you have checked all of the components, installed and tested the unit.
7. Lifting the cabinet
   - Most cabinets can be lifted as one piece.
   - Install the cabinet on the existing work surface or Air Science support stand (if ordered)

NOTE:

- *When installing the cabinet onto an existing work surface, ensure that the structure can safely support the combined weight of the cabinet and any related equipment. Some modifications to the work surface may be necessary.*
- *The work surface should be smooth and nonporous and resistant to the disinfectants and chemicals used in conjunction with the cabinet.*

2.2 PACKAGING CONTENTS

The following items are included together with your manual:

- Test certificate
- Test report

In case this manual and/or test report is lost or misplaced, Air Science retains a copy in our files. A replacement copy can be obtained by contacting Air Science and stating the cabinet model, serial number and a brief description of the information desired.

CHAPTER III
INSTALLING YOUR CABINET

3.1 CHOOSING A SUITABLE LOCATION

Location impacts the nature and extent of external airflow disturbances, which may affect performance of the cabinet when it is exposed to these disturbances.

When installing the cabinet, it should be located as far away as possible from sources of airflow disturbance and in an orientation which optimally shields the cabinet's airflow from all external airflow disturbances. Please note that the cabinet should not be placed close to another cabinet.

Please follow these guidelines when choosing a suitable location for your cabinet:

- The location must be far away from :
    a. personnel traffic flows
    b. air vents (in and out)
    c. door and window
    d. any other sources of disruptive air currents or air drafts

    If drafts or other disruptive air currents exceed the face velocity of the filter, the potential exists for contaminated air to enter the work zone of the cabinet.

- A minimum distance of 50 cm to the top of the ceiling is recommended for blower changing purpose.
- A clearance of 183 cm (6ft) in front of cabinet is strongly advised in order to maintain proper airflow.
- Please permit adequate space for cleaning behind the cabinet.

3.2 ENVIRONMENTAL/ELECTRICAL CONDITIONS

The equipment is designed to be safe for at least the following conditions:

- Indoor use
- Altitude < 6,500 ft (2,000 m)
- 5ºC to 40ºC (41ºF to 104ºF) Ambient
- Relative Humidity <80% up to 31ºC (88ºF) decreasing to <50% at 40ºC (104ºF)
- UL Installation Category II
- UL Pollution Degree 2
- Continuous operation
- Mains supply tolerance of –10%/+10%
- 120 VAC, 60 Hz, 10A or 230VAC, 50Hz, 5A
- Fuse: 250V, 10A, Time Lag for 120VAC or Fuse: 250V, 5A, Time Lag for 230VAC
- Always ensure the unit is connected to a reliable and properly grounded receptacle
- The appliance inlet on this device is the disconnect device and the appliance should not be positioned so that it is difficult to operate it.

3.3 INSTALLING YOUR CABINET

1. Please refer to the unpacking your cabinet on the previous chapter section on lifting the cabinet
2. Inspect your cabinet carefully, should you find any defect please refer to the freight claim information and our warranty terms and conditions
4. Peal off any protective masking that was left on the cabinet during manufacturing.
3. Wipe down the interior and exterior of the cabinet with water or a mild household detergent.
4. Connect cabinet to the main power supply and turn on the blower. Each cabinet requires its own dedicated 13A (230V) or 15A (115V) power outlet which should not be shared with other appliances.

NOTE:

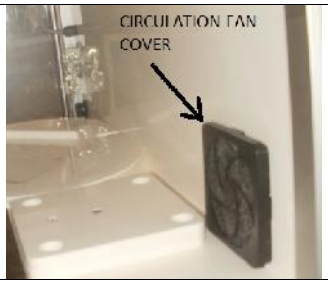
DO NOT MOVE THE CABINET WITHOUT OBSERVING THE FOLLOWING PRECAUTIONS:
1. Observe the necessary precautions when relocating the cabinet as it is heavy
2. Warning Tipping Hazard. Pushing high up on the unit may cause system to tip over. Be careful when moving. Move with help. Do not lift unit by handle.

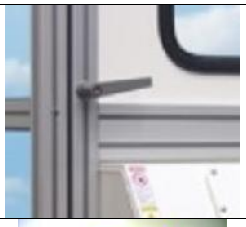
3.4 Set-up

Your Air Science product is shipped in one piece. **Items below may look different in other models.** Please follow the following instructions and photos (shown is a standard **ARV-33T** that explain how to:

- Set up the main unit.
- Fit the main filters and pre-filters
- Operate the other controls

1. Unpack the unit.	
a. Place the unit in the location required (this should be near mains power. b. Remove protective film from the unit panels. c. Ensure that the main power lead is unplugged from the top of the cabinet before carrying out any filter installation operations. **<u>Warning – Tipping Hazard.</u> Pushing high up on the unit may cause system to tip over. Be careful when moving. Move with help. For tall versions, Do not lift unit by handle.**	
2. Add main filters as follows:	
a. Remove cover to access the filter compartment, by removing screws.	

b. Unwrap the CARBON filter from its bag c. Ensure gasket is on the bottom of the fitter.	
d. Note your filter details on the Filter Maintenance sticker for easy reference and place sticker in convenient location on outside of unit. You may also write the install date on the filter itself. (Actual filter not shown)	
e. Place filter in location as shown on picture.	
f. Place filter clamps after putting carbon filter and pre-filter. Screw cover back in place.	 
3. Circulation fan pre-filter:	
To add the pre-filter circulation fan (this is installed at the factory) a. Take off circulation fan cover located in the work zone b. Install filter c. Replace	 

4. Humidifier- It plugs into its unique mating connector. Style may vary depending on model.	
5. Install hot plate. It plugs into its unique mating connector. Style may vary depending on unit.	
6. The hanging rails are secure as shown.	
7. The cabinet door handle has a key lock.	
8. Large walk-in chambers will have a emergency stop button in the chamber and a manual door lock release.	

3.5 PERFORMANCE VALIDATION/CERTIFICATION

After installation and prior to use, cabinet performance must be validated and certified to factory standards. The following tests should be performed:

- Humidity and hot plate function

The testing methods and equipment required are specified on the test report. It is recommended that these tests be performed only by a qualified technician who is familiar with the methods and procedures for certifying these types of cabinets.

3.6 DISCLAIMER

The performance of the cabinet, while rigorously evaluated at the factory, cannot be guaranteed once after transit and installation. Therefore the on-site testing is always recommended.

CHAPTER IV
OPERATING YOUR CABINET

NOTE:

- **TO PROTECT COMPUTER ELECTICAL COMPONENTS WE RECOMMEND PLUGGING THIS DEVICE INTO AN APC OR SIMLIAR ELECTRICAL SURGE PROTECTOR**
- **THE FUMING CYCLE WILL NOT START UNLESS DOOR IS CLOSED AND UNTIL HUMIDITY REACHES YOUR IDEAL SET POINT IS ACHIEVED.**
- **HARMFUL VAPORS IN THE CHAMBER, DO NOT ATTEMPT TO OPEN DOOR UNTIL PURGE CYCLE IS COMPLETE.**
- **USE STYLUS PEN OR FINGER-TIP ON THE TOUCH SCREEN. DO NOT USE METAL OBJECTS.**

4.1 OPERATING INSTRUCTIONS

1. Turn power on via Green Switch.
2. The menu screens are designed to prompt the use of action to be taken to complete a full cycle. Screen is touch operated. Do not tap on screen with any object that could damage it.
3. Upon start-up the unit will load software and self calibrate.
4. Once running, the unit will prompt the user for each activity.
5. You will need to set the desired humidity level and fuming time per your protocol. The unit default is 80% RH for 15 minutes.

The following activities will occur on each cycle:

- Open door and place items to be processed in the chamber
- Check water level in the humidifier. We recommend using distilled water. The water should be changed every few days. The tank can hold one gallon. There is a fill channel that can be used.. Shut unit off when filling. Clean-up any spills below the work surface as needed.
- Place desired amount of cyanoacrylate in a tin dish and put the tin on the hot plate (Do not put cyanoacrylate directly on the hot plate). We recommend one drop per one gallon of air volume of the chamber.
- Close door
- Set desired cycle fuming run time (this is dependant on user experience, size and type of object be processed). A test print is recommended.
- Set desired humidity level. Unit will maintain this level within +/- 5% variance.
- At any time the purge cycle can be pressed to evacuate the chamber, otherwise at the end of the fuming cycle the chamber will automatically purge itself. NEVER ATTEMP TO OPEN THE DOOR WITHOUT FIRST RUNNING PURGING CYCLE. Purge cycle takes 5 minutes.
- When complete, the cycle complete alarm will ring until doors are opened. It is now safe to remove the items. DO NOT TOUCH THE HOT PLATE .

4.2 TOUCH SCREEN CONTROL SYSTEM
Detailed screen sequence located in the back of this manual. Listed below are the main sequence screens.

Start-up Screen

Settings Screen
Here you can change the factory defaults on screen settings, and purgetime length.

Cycle Start/Stop Screens
The Cycle Start Screen allows you to change (if needed) the cycle humidity level and fuming processing time. One ready, touch START. At anytime the cycle can be stopped by touching STOP. When cycle completes, a purge screen will appear showing purge time. Once complete, an audio alarm will ring.

WARNINGS

- The equipment should not be used in a flammable room atmosphere. The unit should only be operated with the correct filter installed for the application. The cabinet must not be used for laboratory work in which chemicals of different types are used that do not match the filter type; or that the primary chemicals or their by-products are not known. The cabinet should not be used for different chemical processes where chemicals from the different processes could react in the filter.
- Do not use a gas flame (Bunsen burners) whenever possible as it interferes with airflow
- Adjustment should be made only by a qualified technician. Do not operate the cabinet if fan fails to run
- Minimize arm movement. Move arms in and out of the cabinet slowly to avoid disrupting cabinet airflow
- Use absorbent pads on the work surface where appropriate to minimize splatter and aerosol generation in case of spillage.

CHAPTER V
MAINTENANCE

5.1 GENERAL
In some countries it is mandatory to maintain written records of checks, tests and repairs carried out on safety equipment. These records must be kept for 5 years. A full list of Occupational Exposure Limits should be obtained from your safety officer.

Regular preventative maintenance on the cabinet will reduce the possibility of hazard to the operator and ensure reliable performance from the cabinet.

WARNING! Before attempting inspection and repairs to the cabinet please ensure the power to the system has been removed and that the power lead has been removed. It should also be noted that fume cabinets are sometimes used to contain and protect users of the cabinet from hazardous or harmful substances. Before commencing this schedule it is important to ensure the cabinet is safe to work on.

5.2 GENERAL CLEANING
Wipe down the unit with only soapy water.

5.3 PRE-FILTERS
Check condition and replace if required;

5.4 LIGHTS
Check the light diffuser is clean before switching the system on. Check that the light is working.

5.5 CHANGE OUT OF FILTERS – USE SECTION 3.4 FOR DETAILS OF FILTER PLACEMENT.

- **WARNING: Ensure persons removing filters are made aware of any potential hazards and that they are provided with any necessary protective clothing and equipment**.
- **WARNING: Disconnect the power supply before removing any filters.**

Hazards associated with the removal and disposal of used filters will depend on the use to which the chamber has been put. If an activated carbon filter is used with hydrocarbon solvents, the filter will retain the solvents without loss, and can be removed in the laboratory. The used filter should be sealed in to a plastic bag prior to disposal, preferably by incineration.

If the filter has contained any dangerous materials, then operator protection must be used including the use of a respirator is advised. The used filters may require disposal by a specialist company.

CONSULT YOUR SAFETY OFFICER OR INDUSTRIAL HYGIENIST BEFORE REMOVING OR DISPOSING ANY FILTERS.

PRE-FILTER

- The main white pre-filter is located below the main filter. Remove the old filter place it in to a bag, which is then sealed ready for disposal.

CIRCULATION PRE-FILTER

- This filter is located in the plastic holder in front of the circulation fan normally on the side wall.

HUMIDITY WICKING FILTER

- Depending on model humidifier installed, a new wicking filter is located in the humidifier.

MAIN CARBON FILTER

- Lift the filter slightly to break the seal and then withdraw the filter. Place the filter in a plastic bag, seal the bag ready for disposal.

5.6 MAINTENANCE SCHEDULE

Please kindly follow the suggested maintenance schedule in order to maintain your Air Science cabinet at its optimum performance (see section 5.12 for a sample schedule to follow).

Monthly

1. Using a damp cloth, clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust. When needed use soap or other household mild detergent.

Quarterly

1. Replace main pre-filters, Circulation pre-filter, wicking filters (if installed)
2. All monthly activities

Annually

1.Replace all main Carbon filters
2. All quarterly activities

5.7 Reset Filter Life

On settings screen enter Filter screen, then on next screen enter Filter Life.
To reset filter life follow prompts on screen or enter Filter Info Screen Filter Lifetime, follow instructions. Filter sets back to zero.

5.8 Optional – Set Hotplate Temp

Enter Systems Test Menu, Hotplate, open door, set hotplate temp on the actual hotplate, close door, and back out of menu. WARNING: Hotplate will be on.

5.9 Optional – Reset UV Bulb Life

To reset UV bulb life follow prompts on screen or enter Setting Menu, UV.

5.10 Calibrate Humidity

Enter Setting Menu, enter Humidifier screen, and adjust 'Q' factor to calibrate screen to internal humidity. NOTE: Lowering 'Q' factor increases the screen reading.

5.11 Calibrate Screen Sensitivity

Enter Settings Menu, Calibrate Screen, follow promps.

5.12 USER MONTHLY MAINTENANCE SCHEDULE

Model:		**Year**	
Serial Number:		**Responsible Person:**	

Month	Clean exterior surface	Notes:	By Who
Jan			
Feb			
Mar			
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			

Monthly
1. Using a damp cloth, clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust. When needed use soap or other household mild detergent.

Quarterly
1. Replace main pre-filters, Circulation pre-filter, wicking filters (if installed)
2. All monthly activities

Annually
1.Replace all main Carbon filters
2. All quarterly activities

5.13 FAULT FINDING

Warning: Before attempting any inspection or replacement of electrical components, always isolate the fume cabinet from the mains supply and remove the power supply cable.

NOTE: FAQ SCREEN WILL ANSWER MOST QUESTIONS.

FAULT	CHECK
Light not working (if equipped)	Check supply Check Light bulb is located correctly
Fan not working	Check inlet fuse Check any loose wires to terminal blocks Replace fan capacitor Replace fan
Screen/Software 'freezes up'	Reboot unit by re-starting. Firmly touch each selection on the screen.
You can smell fumes	Check no gaps in door or door gasket Check no gaps in blue filter door or gasket Check gasket around the blue sensor panel. Check purge cycle working (hear fan) Replace white prefilter Replace carbon filter
Humidity not increasing	Check humidifier turning on Check water level full and wick installed Replace Black circulation prefilter Check no gaps in door or door gasket Check gasket around the blue sensor panel Replace humidity sensor Check Circulation fan is running
No fumes being generated	Check hot plate is working.

5.14 COMPONENT CHANGING – SHOULD ONLY BE CARRIED OUT BY TRAINED PERSONNEL.

Warning: Ensure mains power supply has been removed prior to any work being carried out. CONTACT AIR SCIENCE FOR SPECIFIC INSTRUCTIONS

CHAPTER VI

6.1 COMPACT FLORESCENT LAMPS (CFL's)

Why do we use CFL's?
CFL's use less electricity and prevent greenhouse gas emissions that lead to global climate change. CFL's use up to 75 percent less energy (electricity) than other light bulbs and last up to 10 times longer.

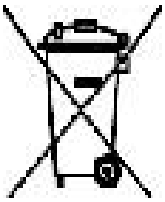
Do CFL's contain mercury?
CFL's contain a very small amount of mercury sealed within the glass tubing – an average of 4 milligrams – about the amount that would cover the tip of a ballpoint pen. Mercury is an essential part of CFL's; it allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact (not broken) or in use.

What is mercury?
Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Coal-fired power plants are the largest man-made source because mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Coal-fired power generation accounts for roughly 40 percent of the mercury emissions. The use of CFL's reduces power demand, which helps reduce mercury emissions from power plants.

How do CFL's result in less mercury in the environment compared to traditional light bulbs?
CFL's use less electricity than incandescent lights, meaning CFL's reduce the amount of mercury into the environment and landfill waste (because the bulbs last longer).

What precautions should I take when using CFL's in my Lab?
CFL's are made of glass and can break if dropped or roughly handled. Be careful when removing the bulb from its packaging, installing it, or replacing it. Always screw and unscrew the light bulb by its base (not the glass), and never forcefully twist the CFL into a light socket. If a CFL breaks in your lab, follow the clean-up recommendations below. Used CFL's should be disposed of properly (see below).

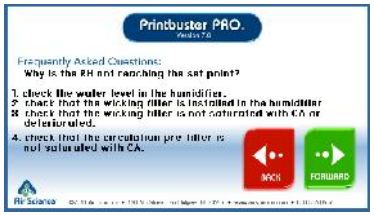
What should I do with a CFL when it burns out?
We recommend that you take advantage of available local recycling options for CFL's. Please contact your local municipal solid waste agency directly, or go to www.epa.gov/bulbrecycling or www.earth911.org to identify local recycling options. If your state or local environmental regulatory agency permits you to put used or broken CFL's in the garbage, seal the bulb in two plastic bags and put it into the outside trash, or other protected outside location, for the next normal trash collection. Never send a fluorescent light bulb or any other mercury-containing product to an incinerator.

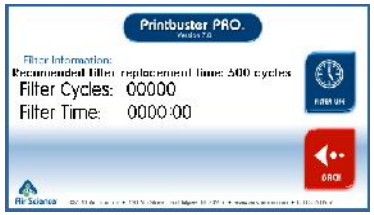


How should I clean up a broken fluorescent bulb?
Because CFL's contain a small amount of mercury, we recommend the following clean-up and disposal guidelines, but please contact your Safety Manager for instruction before following this guideline:

1. **Before Clean-up: Air Out the Room**
   - Have people leave the room, and don't let anyone walk through the breakage area on their way out.
   - If possible, open a window and leave the room for 15 minutes or more.
   - If possible shut off the heating/air conditioning system.
2. **Clean-Up Steps for Hard Surfaces**
   - Wear gloves and carefully scoop up glass fragments and powder using stiff paper or cardboard and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
   - Use sticky tape, such as duct tape, to pick up any remaining small glass pieces and powder.
   - Wipe the area clean with damp paper towels or disposable wet wipes. Place towels in the glass jar or plastic bag also gloves.
   - Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.
3. **Clean-up Steps for Clothing**
   - If clothing materials come in direct contact with broken glass or mercury-containing powder from inside the bulb that may stick to the fabric, the clothing should be thrown away. Do not wash such clothing because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.
   - You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken CFL, such as the clothing you are wearing when you cleaned up the broken CFL, as long as that clothing has not come into direct contact with the materials from the broken bulb.
   - If shoes come into direct contact with broken glass or mercury-containing powder from the bulb, wipe them off with damp paper towels or disposable wet wipes. Place the towels or wipes in a glass jar or plastic bag for disposal also gloves.
4. **Disposal of Clean-up Materials**
   - Immediately place all clean-up materials outdoors in a trash container or protected area for the next normal trash pickup.
   - Wash your hands after disposing of the jars or plastic bags containing clean-up materials.
   - Check with your local or state government about disposal requirements in your specific area. Some local governments/states do not allow such trash disposal. Instead, they require that broken and unbroken mercury-containing bulbs be taken to a local recycling center.

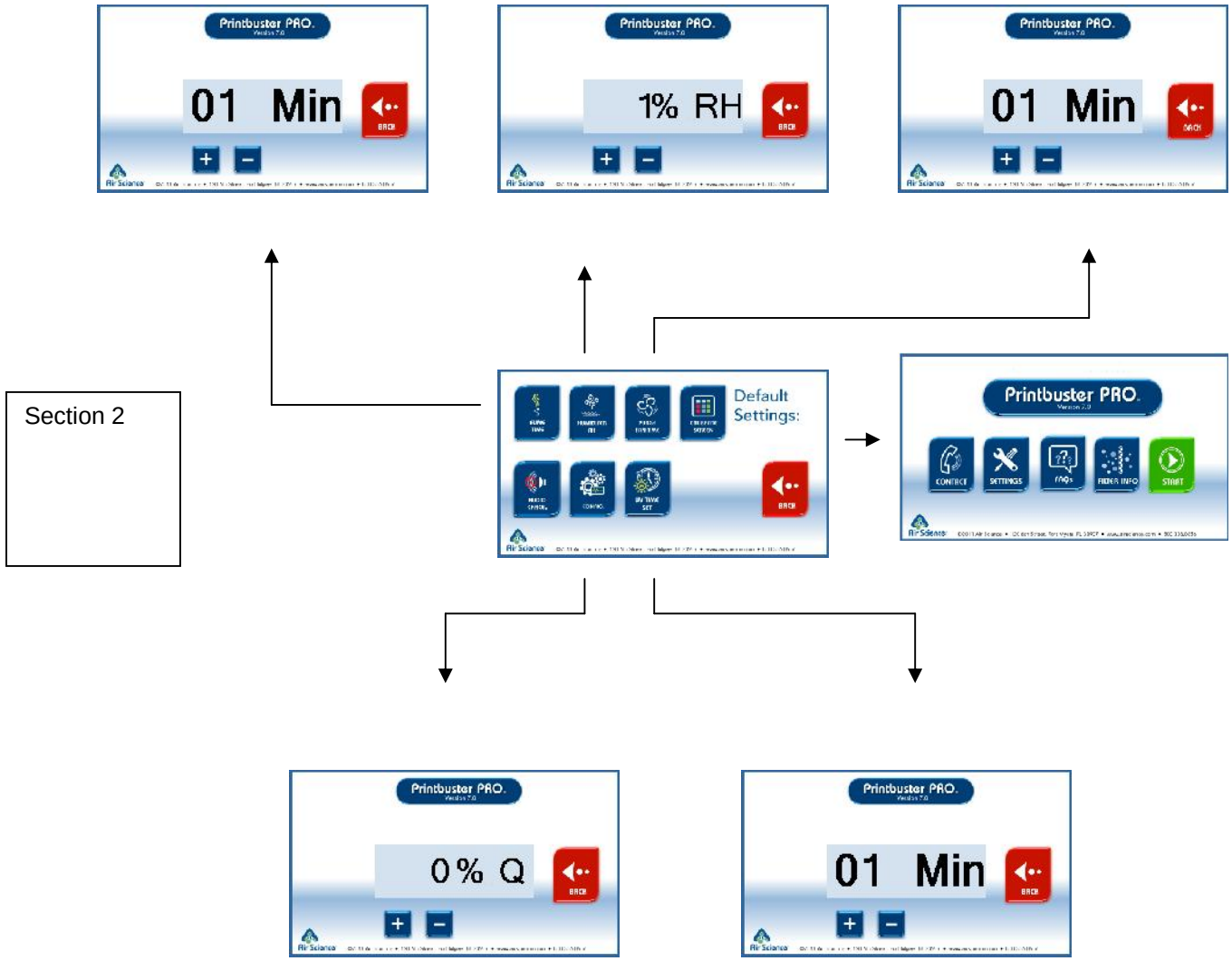
Screen Sequence Main Screens Section 1





Continued on Section 2

Continued on Section 3


Printbuster PRO.
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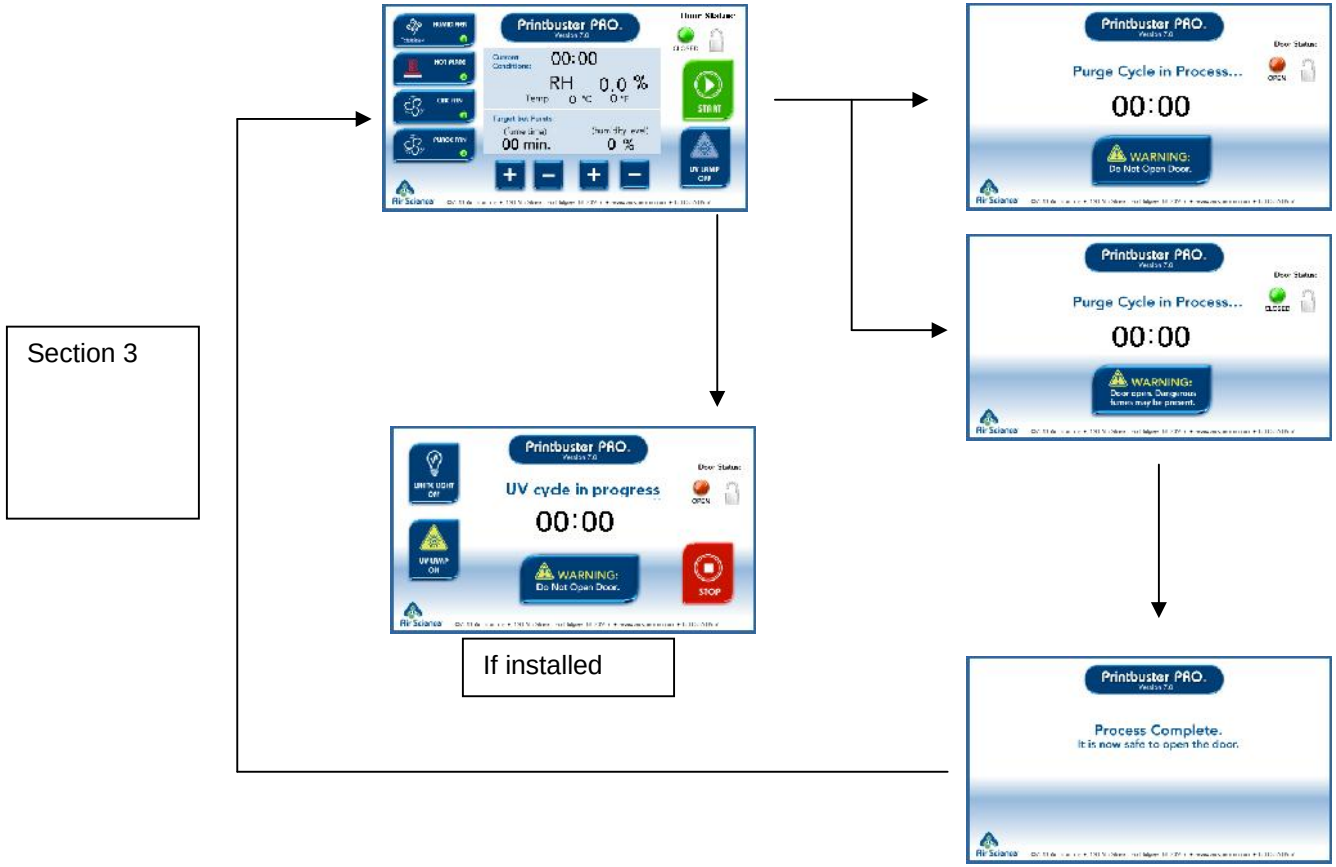
Section 2


Printbuster PRO.
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RH 0.0 %
START
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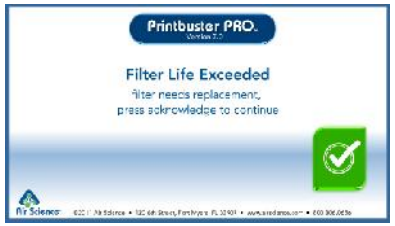
Purge Cycle in Process...
00:00
WARNING:
Do Not Open Door.
Purge Cycle in Process...
00:00
WARNING:
Door open. Dangerous fumes may be present.
UV cycle in progress
00:00
WARNING:
Do Not Open Door.
STOP
Process Complete.
It is now safe to open the door.
Section 3
If installed

Section 4
Units
equipped
with
Systems
Test Feature



WARRANTY REGISTRATION AND CUSTOMER SATISFACTION SURVEY

Model		Serial #		Purchase Date	
Contact Person			Position:		
Company & Address					
Telephone			Fax:		
E-Mail					

Air Science values your business, so your satisfaction is important to us. To help us to serve you better, please take a few minutes to complete our Customer Satisfaction Survey. You may return the results by post, fax, or e-mail using the details above.

Please circle the number that best describes your evaluation of Air Science and add your comments, if any, at the bottom (and continue on another sheet if necessary). We are also interested to receive comparison against any competitors if you are able to provide the information:

	Excellent	Very Good	Good	Must Improve	Poor
1. Were our quotations provided to you promptly and courteously?	5	4	3	2	1
2. Was your order correct when you received it?	5	4	3	2	1
3. Did you receive your order on time and without damage?	5	4	3	2	1
4. Do our products operate properly?	5	4	3	2	1
5. Do our products meet your requirements?	5	4	3	2	1
6. What is your overall judgement of Air Science?	5	4	3	2	1

We enjoy using Air Science products because:

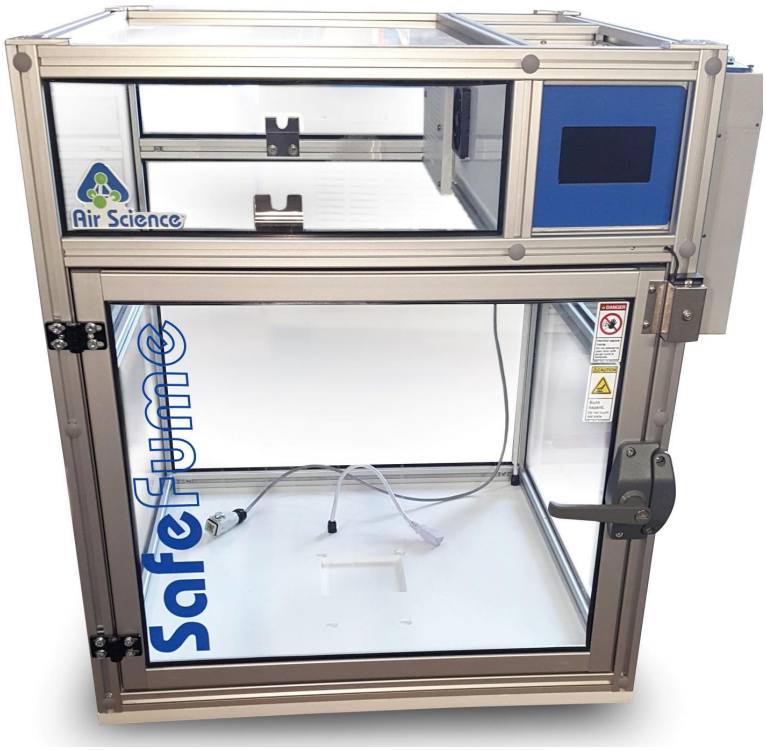
How could Air Science improve its products and /or service to you?

How could Air Science improve this survey?

Thank you very much for your time. Your comments are much appreciated.

COPYRIGHT INFORMATION

AIR SCIENCE®
SAFEFUME™360
CYANOACRYLATE
FUMING CHAMBERS



USER OPERATION MANUAL

Air Science Manual Revision No. SAFEFUME360.V3.2018
Specifications subject to change without notice.

Air Science™

TABLE OF CONTENTS

SAFETY WARNINGS

- This cabinet does not offer product and/or sample protection.
- Read all instructions before proceeding and observe the installation procedure and environmental/electrical requirements
- Anyone working with, on or around this equipment should read this manual. Failure to read, understand and follow the instructions given in this documentation may result in damage to the unit, injury to operating personnel, and / or poor equipment performance.
- Any internal adjustment, modification or maintenance to this equipment must be undertaken by qualified service personnel.
- The use of any hazardous material in the cabinet must be monitored by an industrial hygienist, safety officer or some other suitably qualified individual.
- Explosive or inflammable substances should never be used in the cabinet unless a qualified safety professional has evaluated the risk involved.
- If chemical, radiological or other non-microbiological hazards are being used in the cabinet, additional protective measures should be taken. Besides that, the operation should be monitored by a suitably trained individual.
- Before you proceed, you should thoroughly understand the installation procedures and take note of the environmental/electrical requirements of the cabinet.
- In this manual, important safety related points will be marked with this symbol.

- If the equipment is used in a manner not specified by this manual, the protection provided by this equipment may be impaired.

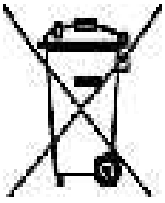
LIMITATION OF LIABILITY

The disposal and / or emission of substances used in connection with this cabinet may be governed by various local regulations. Familiarization and compliance with any such regulation are the sole responsibility of the users of the cabinet. Air Sciences' liability is limited with respect to user compliance with such regulations.

EUROPEAN UNION DIRECTIVE ON WEEE AND RoHS

The European Union has issued two directives:

• Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE)



The objective of the WEEE directive is to promote "….the reuse, recycling and other forms of recovery of such wastes (WEEE) so as to reduce the disposal of waste besides improving the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers…." and hence this directive refers to the disposal of this cabinet within the EU. A "wheelie bin" sticker *(shown alongside)* has to be pasted on all products covered by this directive, indicating that at the time of disposing of the product, it should not be grouped together with general unsorted municipal waste. Instead, distributors of electrical and electronic equipment should be responsible for the collection and scrapping of the products they have sold Please note that this cabinet has been classified as "fixed industrial equipment" and hence the WEEE directive is not applicable to its disposal.

• **Directive 2002/95/EC on Restriction on the use of Hazardous Substances (RoHS)**
With respect to the directive on RoHS, please note that this cabinet falls under category 9 *(monitoring and control instruments)* and is therefore exempted from requirement to comply with the provisions of this directive.

SYMBOLS

Warning of hazardous area or situation

Warning of dangerous electric voltage

Earth (ground) protective conductor

Local government may require proper lamp disposal

FREIGHT CLAIM INFORMATION

Air Science inspects each product for defects before shipment. Air Science products are then carefully packed in compliance with carrier regulations and thoroughly inspected before leaving our plant. Responsibility for their safe delivery is assumed by the carrier upon acceptance of the shipment. Occasionally damage occurs in transit. Claims for loss or damage sustained in transit must be made upon the carrier.

Please remember that you are responsible for all freight claims and the cost of all replacement pieces for each shipment you accept. Inspect each shipment very carefully before acceptance.

Carefully inspect each pallet or crate upon arrival. If a shipment is found to be damaged upon delivery, be sure to have the driver/carrier note all damage details on the delivery receipt.

This is essential or your claim may be denied. Also if pallets are stacked, please note "Stacked Pallets" on the delivery receipt (pallets are not stacked when shipped, unless otherwise stated for certain products). Air Science is not responsible for pallets stacked at carrier terminal. Any unloading difficulties or damages due to stacked materials are carrier's responsibility.

If freight damage is discovered, please refer to the following guidelines in order to process and effective freight claim:

ACCEPTED FREIGHT WITH NOTED/VISIBLE LOSS OR DAMAGE

- Any external evidence of loss or damage must be noted on the freight bill or delivery receipt and signed by the courier's agent or delivery driver

NOTE: Failure to properly describe evidence of loss or damage may result in the carrier refusing to honor a claim

- Contact delivering terminal to arrange for a claim form and inspection report to be faxed or mailed to you
- Notify Air Science regarding which items need replacement
- Keep all damaged items and packing material until claim is resolved between you and the carrier

ACCEPTED FREIGHT WITH CONCEALED LOSS OR DAMAGE

When a damage or loss is discovered during unpacking:

- Contact the carrier immediately upon discovery of damage and request for inspection by the carrier's agent.
- Carrier will determine inspection needs based on value and time elapsed
- Notify Air Science regarding which items require replacement
- Air Science will fax to you an order acknowledgment that includes value of items for claim (less freight amount)
- Air Science will invoice you for replacement materials
- Air Science standard payment terms will apply

UNACCEPTED FREIGHT

- If substantial damage is noted upon inspection you have the right to refuse part or all of a shipment. Do not unpack pallets or crates with damaged materials. Individual items cannot be refused. You must refuse the entire pallet or accept the freight with noted damage (see above)
- Air Science will handle all freight claim procedures and process a replacement order for your company for the damaged pieces at no charge. (if the original order was shipped under CIF terms i.e. Air Science had covered the insurance)

NOTE: Any correspondence with Air Science regarding loss or damage must be accompanied by a copy of the shipping carrier's report. Air Science will not accept returns that have not been authorized.

In the event of accepted freight with damage or loss, notification of loss or damage must be sent to the carrier within 10 days of receiving the freight. Notification outside the 10-day time frame may result in shipping damage claim being denied.

WARRANTY TERMS AND CONDITIONS

Air Science value your business, so your satisfaction is important to us, so please complete and return our customer satisfaction survey at the end of this manual.

Should you be unfortunate to receive product that appears to be damaged or defective or does not appear to be working satisfactorily, then please contact our experienced technicians for assistance at the address shown at the foot of this page.
The Air Science range of cabinets has been carefully designed to produce a system that will provide product safety in an easy to use system. However, basic safety precautions should always be followed when:

- ❑ Using an electrical product; and
- ❑ Handling hazardous substances.

Air Science products come with a 2-year limited warranty beginning on the date of shipment from the Air Science. Air Science's limited warranty covers defects in materials and workmanship. Air Science's liability under this limited warranty shall be, at our option, to repair or replace any defective parts of the equipment, provided if proven to the satisfaction of Air Science that these parts were defective at the time of being sold. This limited warranty does not cover:

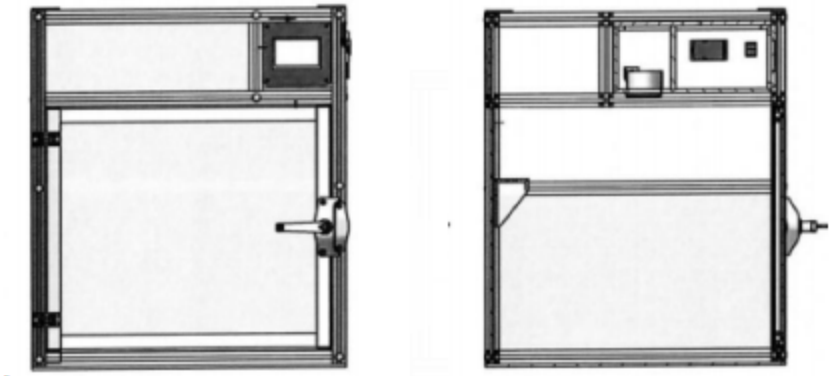
- ❑ Installation (inside delivery handling) damage.
- ❑ Products with missing or defaced serial numbers
- ❑ Consumables such as filters (HEPA, ULPA, carbon, pre-filters) and fluorescent / UV bulbs
- ❑ Problems that result from:
  - External causes such as accident, abuse, misuse, problems with electrical power, improper operating environmental conditions
  - Servicing that is not carried out by Air Science personnel or their appointed agents, or in the case of electrical work by a qualified electrician
  - Usage that is not in accordance with these product instructions
  - Failure to follow these product instructions
  - Failure to perform preventive maintenance
  - Problems caused by using accessories, parts, or components not supplied or approved by Air Science
  - Damage by fire, floods, or acts of God
  - Customer modifications to the product

ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN TIME TO THE TERM OF THIS LIMITED WARRANTY. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. AIR SCIENCE DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST WORK. AIR SCIENCE LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH AIR SCIENCE IS RESPONSIBLE. FLORIDA LAW GOVERNS THIS WARRANTY

CHAPTER I

PRODUCT INFORMATION

Safefume™ Cyanoacrylate fuming chambers are designed to safely develop latent fingerprints using ethyl cyanoacrylate (CNA) vapor in a controlled environment for optimum effectiveness and safety where moisture and fuming time are critical factors. The tamper resistant compartment helps maintain the chain of custody. The unique Air Science Multiplex™ filtration system, together with professional design and unique construction features offer personnel protection during use.



ARV-24 (side view)

MODEL	DIMENSIONS			WEIGHT (lbs/Kg)	
	Internal Height	External (W x D x H)	Shipping (W x D x H)	Net	Ship
Safefume 360 Models					
ARV-24	30.3" 770 mm	28.5" x 26.4" x 31.3" 725 x 671 x 799mm	32" x 32" x 40" 813 x 813 x 1020 mm	130 / 59	200 / 91

CHAPTER II

UNPACKING YOUR CABINET

This chapter aims to provide relevant information on how to handle the cabinet properly upon receipt. Failure to follow the following instructions may damage the cabinet. We strongly advise you to read this chapter carefully before proceeding further.

2.1 STEP-BY-STEP PROCEDURE

1. Inspecting the crate, pallet, boxes
   Upon receipt of your new cabinet, inspect all cartons. If there is any visible damage to the exterior please refer to freight claim information.
2. Moving the Pallet
   - The pallet is designed to protect our cabinet from any foreseeable circumstances. However, excessive impact onto the boxes or pallet may also damage the cabinet. Prevent any direct impact or hitting to the pallet when moving.
   - b. When lifting the pallet, please always ensure that the floor jack or mechanical lift truck has always entered fully under the pallet in order to achieve stability. Failure to do so will increase the risk of the pallet falling off the floor jack or mechanical lift truck during handling. Please use a suitable extension bar when the situation arises.
3. Opening the Boxes
   - If you did not receive one or more of the parts listed on the packing checklist, or if any of the items are damaged, please contact your distributor or Air Science immediately for further instructions.
4. Removing the packaging material
   - The cabinet is protected by Styrofoam, cardboard, and or and shrink-wrap.
   - If you find any damage during this stage of unpacking please refer to freight claim information.
   - t is the best practice to leave the cabinet secured with straps to the pallet until the cabinet is located in its approximate final position to facilitate ease and safety in handling.

Choosing the best location for your cabinet in order to achieve optimum operating performance of your cabinet is determined by a number of factors. Please refer to the next chapter for some guidelines.

5. Moving the cabinet
   - When lifting the pallet with the cabinet, please always ensure that the floor jack or mechanical lift truck has always entered fully under the pallet. This is to increase the stability of the cabinet and reduce the risk of the cabinet falling down. Please use extension bar when necessary. During the moving of the cabinet, please ensure there is enough distance between the supports of pallet and the ground. Dragging the pallet against the ground (at one side or otherwise) will damage the pallet and possibly your new cabinet.
6. Removing the strapping
   - Remove the strapping by cutting it at a safe position to prevent any scratch on the surface of your new cabinet.
   - Do not discard the packaging material for your cabinet until you have checked all of the components, installed and tested the unit.
7. Lifting the cabinet
   - Most cabinets can be lifted as one piece.
   - Install the cabinet on the existing work surface or Air Science support stand (if ordered)

NOTE:

- *When installing the cabinet onto an existing work surface, ensure that the structure can safely support the combined weight of the cabinet and any related equipment. Some modifications to the work surface may be necessary.*
- *The work surface should be smooth and nonporous and resistant to the disinfectants and chemicals used in conjunction with the cabinet.*

2.2 PACKAGING CONTENTS

The following items are included together with your manual:

- Test certificate
- Test report

In case this manual and/or test report is lost or misplaced, Air Science retains a copy in our files. A replacement copy can be obtained by contacting Air Science and stating the cabinet model, serial number and a brief description of the information desired.

CHAPTER III
INSTALLING YOUR CABINET

3.1 CHOOSING A SUITABLE LOCATION

Location impacts the nature and extent of external airflow disturbances, which may affect performance of the cabinet when it is exposed to these disturbances.

When installing the cabinet, it should be located as far away as possible from sources of airflow disturbance and in an orientation which optimally shields the cabinet's airflow from all external airflow disturbances. Please note that the cabinet should not be placed close to another cabinet.

Please follow these guidelines when choosing a suitable location for your cabinet:

- The location must be far away from :
    a. personnel traffic flows
    b. air vents (in and out)
    c. door and window
    d. any other sources of disruptive air currents or air drafts

    If drafts or other disruptive air currents exceed the face velocity of the filter, the potential exists for contaminated air to enter the work zone of the cabinet.

- A minimum distance of 50 cm to the top of the ceiling is recommended for blower changing purpose.
- A clearance of 183 cm (6ft) in front of cabinet is strongly advised in order to maintain proper airflow.
- Please permit adequate space for cleaning behind the cabinet.

3.2 ENVIRONMENTAL/ELECTRICAL CONDITIONS

The equipment is designed to be safe for at least the following conditions:

- Indoor use
- Altitude < 6,500 ft (2,000 m)
- 5ºC to 40ºC (41ºF to 104ºF) Ambient
- Relative Humidity <80% up to 31ºC (88ºF) decreasing to <50% at 40ºC (104ºF)
- UL Installation Category II
- UL Pollution Degree 2
- Continuous operation
- Mains supply tolerance of –10%/+10%
- 120 VAC, 60 Hz, 10A or 230VAC, 50Hz, 5A
- Fuse: 250V, 10A, Time Lag for 120VAC or Fuse: 250V, 5A, Time Lag for 230VAC
- Always ensure the unit is connected to a reliable and properly grounded receptacle
- The appliance inlet on this device is the disconnect device and the appliance should not be positioned so that it is difficult to operate it.

3.3 INSTALLING YOUR CABINET

1. Please refer to the unpacking your cabinet on the previous chapter section on lifting the cabinet
2. Inspect your cabinet carefully, should you find any defect please refer to the freight claim information and our warranty terms and conditions
4. Peal off any protective masking that was left on the cabinet during manufacturing.
3. Wipe down the interior and exterior of the cabinet with water or a mild household detergent.
4. Connect cabinet to the main power supply and turn on the blower. Each cabinet requires its own dedicated 13A (230V) or 15A (115V) power outlet which should not be shared with other appliances.

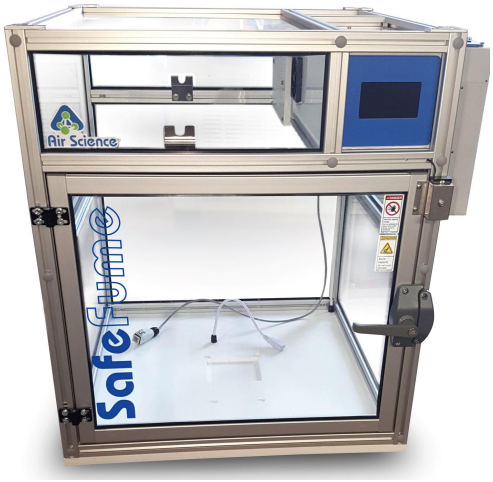
NOTE:

DO NOT MOVE THE CABINET WITHOUT OBSERVING THE FOLLOWING PRECAUTIONS:
1. Observe the necessary precautions when relocating the cabinet as it is heavy
2. Warning Tipping Hazard. Pushing high up on the unit may cause system to tip over. Be careful when moving. Move with help. Do not lift unit by handle.

3.4 Set-up

Your Air Science product is shipped in one piece. **Items below may look different in other models.** Please follow the following instructions and photos (shown is a standard **ARV-33T)** that explain how to:

- Set up the main unit.
- Fit the main filters and pre-filters
- Operate the other controls

SETUP OF ARV-24	
1. Unpack the unit.	
a. Place the unit in the location required (this should be near mains power. b. Place chamber on the steel cart, if purchased. The front door should be facing outward from the side of the cart with no raised edge. c. Ensure that the main power lead is unplugged from the top of the cabinet before carrying out any filter installation operations. **<u>Warning – Tipping Hazard.</u> Pushing high up on the unit may cause system to tip over. Be careful when moving.**	
2. Add main filters as follows:	
a. Locate the filter cover panel inside the chamber. Undo the four corner screws.	

b. Allow the panel/fan assembly to hang down inside the chamber. Undo the four hex nuts holding the filter clamping panel in place	
c. Remove filter clamping panel	
d. install carbon filter with gasket side toward the back of the filter compartment, allowing filter to rest on the polypropylene bracket situated over the lower threads.	
e. place white pre-filter over the front of the carbon filter and re-install filter clamping panel. Route fan wires above the upper threads.	

f. reinstall filter cover	
3. Circulation fan pre-filter:	
a.Two circulation fan pre-filters are used in the chamber. Both are located on the sides of the electrical compartment in the upper right of the chamber.	
b. To replace the pre-filter, pull off the plastic cover, install new circulation fan pre-filter and replace the cover.	

4. Install the hotplate in the center of the chamber. Holes in the floor will align with the pads on the bottom of the hotplate.	
5. The humidifier will be installed in the lower rear corner of the chamber. A plastic funnel is provided to help fill with water. DO NOT FILL PAST THE LINE INSIDE THE UNIT.	
6. To install the UV light, a. place the bulb into the bracket located above the door on the inside of the chamber	
b. connect power cable from UV light to the corresponding inlet on the side of the electrical compartment.	 

3.5 PERFORMANCE VALIDATION/CERTIFICATION

After installation and prior to use, cabinet performance must be validated and certified to factory standards. The following tests should be performed:

- Humidity and hot plate function

The testing methods and equipment required are specified on the test report. It is recommended that these tests be performed only by a qualified technician who is familiar with the methods and procedures for certifying these types of cabinets.

3.6 DISCLAIMER

The performance of the cabinet, while rigorously evaluated at the factory, cannot be guaranteed once after transit and installation. Therefore the on-site testing is always recommended.

CHAPTER IV
OPERATING YOUR CABINET

NOTE:

- **TO PROTECT COMPUTER ELECTICAL COMPONENTS WE RECOMMEND PLUGGING THIS DEVICE INTO AN APC OR SIMLIAR ELECTRICAL SURGE PROTECTOR**
- **THE FUMING CYCLE WILL NOT START UNLESS DOOR IS CLOSED AND UNTIL HUMIDITY REACHES YOUR IDEAL SET POINT IS ACHIEVED.**
- **HARMFUL VAPORS IN THE CHAMBER, DO NOT ATTEMPT TO OPEN DOOR UNTIL PURGE CYCLE IS COMPLETE.**
- **USE STYLUS PEN OR FINGER-TIP ON THE TOUCH SCREEN. DO NOT USE METAL OBJECTS.**

4.1 OPERATING INSTRUCTIONS

1. Turn power on via Green Switch.
2. The menu screens are designed to prompt the use of action to be taken to complete a full cycle. Screen is touch operated. Do not tap on screen with any object that could damage it.
3. Upon start-up the unit will load software and self calibrate.
4. Once running, the unit will prompt the user for each activity.
5. You will need to set the desired humidity level and fuming time per your protocol. The unit default is 80% RH for 15 minutes.

The following activities will occur on each cycle:

- Open door and place items to be processed in the chamber
- Check water level in the humidifier. We recommend using distilled water. The water should be changed every few days. The tank can hold one gallon. There is a fill channel that can be used.. Shut unit off when filling. Clean-up any spills below the work surface as needed.
- Place desired amount of cyanoacrylate in a tin dish and put the tin on the hot plate (Do not put cyanoacrylate directly on the hot plate). We recommend one drop per one gallon of air volume of the chamber.
- Close door
- Set desired cycle fuming run time (this is dependant on user experience, size and type of object be processed). A test print is recommended.
- Set desired humidity level. Unit will maintain this level within +/- 5% variance.
- At any time the purge cycle can be pressed to evacuate the chamber, otherwise at the end of the fuming cycle the chamber will automatically purge itself. NEVER ATTEMP TO OPEN THE DOOR WITHOUT FIRST RUNNING PURGING CYCLE. Purge cycle takes 5 minutes.
- When complete, the cycle complete alarm will ring until doors are opened. It is now safe to remove the items. DO NOT TOUCH THE HOT PLATE .

4.2 TOUCH SCREEN CONTROL SYSTEM
Detailed screen sequence located in the back of this manual. Listed below are the main sequence screens.

Start-up Screen

Settings Screen
Here you can change the factory defaults on screen settings, and purgetime length.

Cycle Start/Stop Screens
The Cycle Start Screen allows you to change (if needed) the cycle humidity level and fuming processing time. One ready, touch START. At anytime the cycle can be stopped by touching STOP. When cycle completes, a purge screen will appear showing purge time. Once complete, an audio alarm will ring.

WARNINGS

- The equipment should not be used in a flammable room atmosphere. The unit should only be operated with the correct filter installed for the application. The cabinet must not be used for laboratory work in which chemicals of different types are used that do not match the filter type; or that the primary chemicals or their by-products are not known. The cabinet should not be used for different chemical processes where chemicals from the different processes could react in the filter.
- Do not use a gas flame (Bunsen burners) whenever possible as it interferes with airflow
- Adjustment should be made only by a qualified technician. Do not operate the cabinet if fan fails to run
- Minimize arm movement. Move arms in and out of the cabinet slowly to avoid disrupting cabinet airflow
- Use absorbent pads on the work surface where appropriate to minimize splatter and aerosol generation in case of spillage.

CHAPTER V
MAINTENANCE

5.1 GENERAL
In some countries it is mandatory to maintain written records of checks, tests and repairs carried out on safety equipment. These records must be kept for 5 years. A full list of Occupational Exposure Limits should be obtained from your safety officer.

Regular preventative maintenance on the cabinet will reduce the possibility of hazard to the operator and ensure reliable performance from the cabinet.

WARNING! Before attempting inspection and repairs to the cabinet please ensure the power to the system has been removed and that the power lead has been removed. It should also be noted that fume cabinets are sometimes used to contain and protect users of the cabinet from hazardous or harmful substances. Before commencing this schedule it is important to ensure the cabinet is safe to work on.

5.2 GENERAL CLEANING
Wipe down the unit with only soapy water.

5.3 PRE-FILTERS
Check condition and replace if required;

5.4 LIGHTS
Check the light diffuser is clean before switching the system on. Check that the light is working.

5.5 CHANGE OUT OF FILTERS – USE SECTION 3.4 FOR DETAILS OF FILTER PLACEMENT.

- **WARNING: Ensure persons removing filters are made aware of any potential hazards and that they are provided with any necessary protective clothing and equipment**.
- **WARNING: Disconnect the power supply before removing any filters.**

Hazards associated with the removal and disposal of used filters will depend on the use to which the chamber has been put. If an activated carbon filter is used with hydrocarbon solvents, the filter will retain the solvents without loss, and can be removed in the laboratory. The used filter should be sealed in to a plastic bag prior to disposal, preferably by incineration.

If the filter has contained any dangerous materials, then operator protection must be used including the use of a respirator is advised. The used filters may require disposal by a specialist company.

CONSULT YOUR SAFETY OFFICER OR INDUSTRIAL HYGIENIST BEFORE REMOVING OR DISPOSING ANY FILTERS.

PRE-FILTER

- The main white pre-filter is located below the main filter. Remove the old filter place it in to a bag, which is then sealed ready for disposal.

CIRCULATION PRE-FILTER

- This filter is located in the plastic holder in front of the circulation fan normally on the side wall.

HUMIDITY WICKING FILTER

- Depending on model humidifier installed, a new wicking filter is located in the humidifier.

MAIN CARBON FILTER

- Lift the filter slightly to break the seal and then withdraw the filter. Place the filter in a plastic bag, seal the bag ready for disposal.

5.6 MAINTENANCE SCHEDULE

Please kindly follow the suggested maintenance schedule in order to maintain your Air Science cabinet at its optimum performance (see section 5.12 for a sample schedule to follow).

Monthly

1. Using a damp cloth, clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust. When needed use soap or other household mild detergent.

Quarterly

1. Replace main pre-filters, Circulation pre-filter, wicking filters (if installed)
2. All monthly activities

Annually

1.Replace all main Carbon filters
2. All quarterly activities

5.7 Reset Filter Life

On settings screen enter Filter screen, then on next screen enter Filter Life.
To reset filter life follow prompts on screen or enter Filter Info Screen Filter Lifetime, follow instructions. Filter sets back to zero.

5.8 Optional – Set Hotplate Temp

Enter Systems Test Menu, Hotplate, open door, set hotplate temp on the actual hotplate, close door, and back out of menu. WARNING: Hotplate will be on.

5.9 Optional – Reset UV Bulb Life

To reset UV bulb life follow prompts on screen or enter Setting Menu, UV.

5.10 Calibrate Humidity

Enter Setting Menu, enter Humidifier screen, and adjust 'Q' factor to calibrate screen to internal humidity. NOTE: Lowering 'Q' factor increases the screen reading.

5.11 Calibrate Screen Sensitivity

Enter Settings Menu, Calibrate Screen, follow promps.

5.12 USER MONTHLY MAINTENANCE SCHEDULE

Model:		**Year**	
Serial Number:		**Responsible Person:**	

Month	Clean exterior surface	Notes:	By Who
Jan			
Feb			
Mar			
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			

Monthly
1. Using a damp cloth, clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust. When needed use soap or other household mild detergent.

Quarterly
1. Replace main pre-filters, Circulation pre-filter, wicking filters (if installed)
2. All monthly activities

Annually
1.Replace all main Carbon filters
2. All quarterly activities

5.13 FAULT FINDING

Warning: Before attempting any inspection or replacement of electrical components, always isolate the fume cabinet from the mains supply and remove the power supply cable.

NOTE: FAQ SCREEN WILL ANSWER MOST QUESTIONS.

FAULT	CHECK
Light not working (if equipped)	Check supply Check Light bulb is located correctly
Fan not working	Check inlet fuse Check any loose wires to terminal blocks Replace fan capacitor Replace fan
Screen/Software 'freezes up'	Reboot unit by re-starting. Firmly touch each selection on the screen.
You can smell fumes	Check no gaps in door or door gasket Check no gaps in blue filter door or gasket Check gasket around the blue sensor panel. Check purge cycle working (hear fan) Replace white prefilter Replace carbon filter
Humidity not increasing	Check humidifier turning on Check water level full and wick installed Replace Black circulation prefilter Check no gaps in door or door gasket Check gasket around the blue sensor panel Replace humidity sensor Check Circulation fan is running
No fumes being generated	Check hot plate is working.

5.14 COMPONENT CHANGING – SHOULD ONLY BE CARRIED OUT BY TRAINED PERSONNEL.

Warning: Ensure mains power supply has been removed prior to any work being carried out. CONTACT AIR SCIENCE FOR SPECIFIC INSTRUCTIONS

CHAPTER VI

6.1 COMPACT FLORESCENT LAMPS (CFL's)

Why do we use CFL's?
CFL's use less electricity and prevent greenhouse gas emissions that lead to global climate change. CFL's use up to 75 percent less energy (electricity) than other light bulbs and last up to 10 times longer.

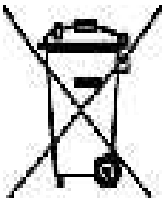
Do CFL's contain mercury?
CFL's contain a very small amount of mercury sealed within the glass tubing – an average of 4 milligrams – about the amount that would cover the tip of a ballpoint pen. Mercury is an essential part of CFL's; it allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact (not broken) or in use.

What is mercury?
Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Coal-fired power plants are the largest man-made source because mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Coal-fired power generation accounts for roughly 40 percent of the mercury emissions. The use of CFL's reduces power demand, which helps reduce mercury emissions from power plants.

How do CFL's result in less mercury in the environment compared to traditional light bulbs?
CFL's use less electricity than incandescent lights, meaning CFL's reduce the amount of mercury into the environment and landfill waste (because the bulbs last longer).

What precautions should I take when using CFL's in my Lab?
CFL's are made of glass and can break if dropped or roughly handled. Be careful when removing the bulb from its packaging, installing it, or replacing it. Always screw and unscrew the light bulb by its base (not the glass), and never forcefully twist the CFL into a light socket. If a CFL breaks in your lab, follow the clean-up recommendations below. Used CFL's should be disposed of properly (see below).

What should I do with a CFL when it burns out?
We recommend that you take advantage of available local recycling options for CFL's. Please contact your local municipal solid waste agency directly, or go to www.epa.gov/bulbrecycling or www.earth911.org to identify local recycling options. If your state or local environmental regulatory agency permits you to put used or broken CFL's in the garbage, seal the bulb in two plastic bags and put it into the outside trash, or other protected outside location, for the next normal trash collection. Never send a fluorescent light bulb or any other mercury-containing product to an incinerator.



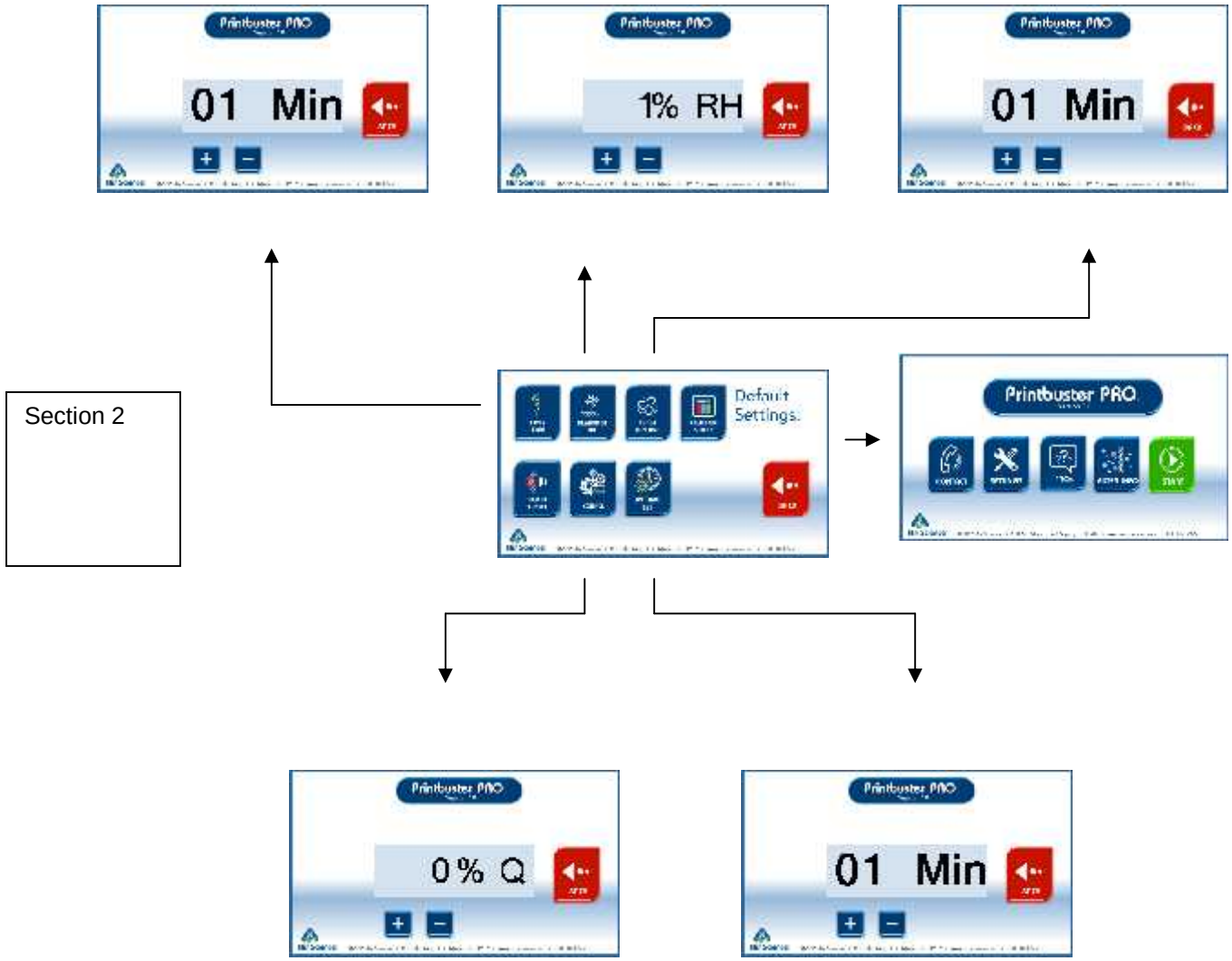
How should I clean up a broken fluorescent bulb?
Because CFL's contain a small amount of mercury, we recommend the following clean-up and disposal guidelines, but please contact your Safety Manager for instruction before following this guideline:

1. **Before Clean-up: Air Out the Room**
   - Have people leave the room, and don't let anyone walk through the breakage area on their way out.
   - If possible, open a window and leave the room for 15 minutes or more.
   - If possible shut off the heating/air conditioning system.
2. **Clean-Up Steps for Hard Surfaces**
   - Wear gloves and carefully scoop up glass fragments and powder using stiff paper or cardboard and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
   - Use sticky tape, such as duct tape, to pick up any remaining small glass pieces and powder.
   - Wipe the area clean with damp paper towels or disposable wet wipes. Place towels in the glass jar or plastic bag also gloves.
   - Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.
3. **Clean-up Steps for Clothing**
   - If clothing materials come in direct contact with broken glass or mercury-containing powder from inside the bulb that may stick to the fabric, the clothing should be thrown away. Do not wash such clothing because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.
   - You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken CFL, such as the clothing you are wearing when you cleaned up the broken CFL, as long as that clothing has not come into direct contact with the materials from the broken bulb.
   - If shoes come into direct contact with broken glass or mercury-containing powder from the bulb, wipe them off with damp paper towels or disposable wet wipes. Place the towels or wipes in a glass jar or plastic bag for disposal also gloves.
4. **Disposal of Clean-up Materials**
   - Immediately place all clean-up materials outdoors in a trash container or protected area for the next normal trash pickup.
   - Wash your hands after disposing of the jars or plastic bags containing clean-up materials.
   - Check with your local or state government about disposal requirements in your specific area. Some local governments/states do not allow such trash disposal. Instead, they require that broken and unbroken mercury-containing bulbs be taken to a local recycling center.

Screen Sequence Main Screens Section 1

Continued on Section 2

Continued on Section 3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Section 2
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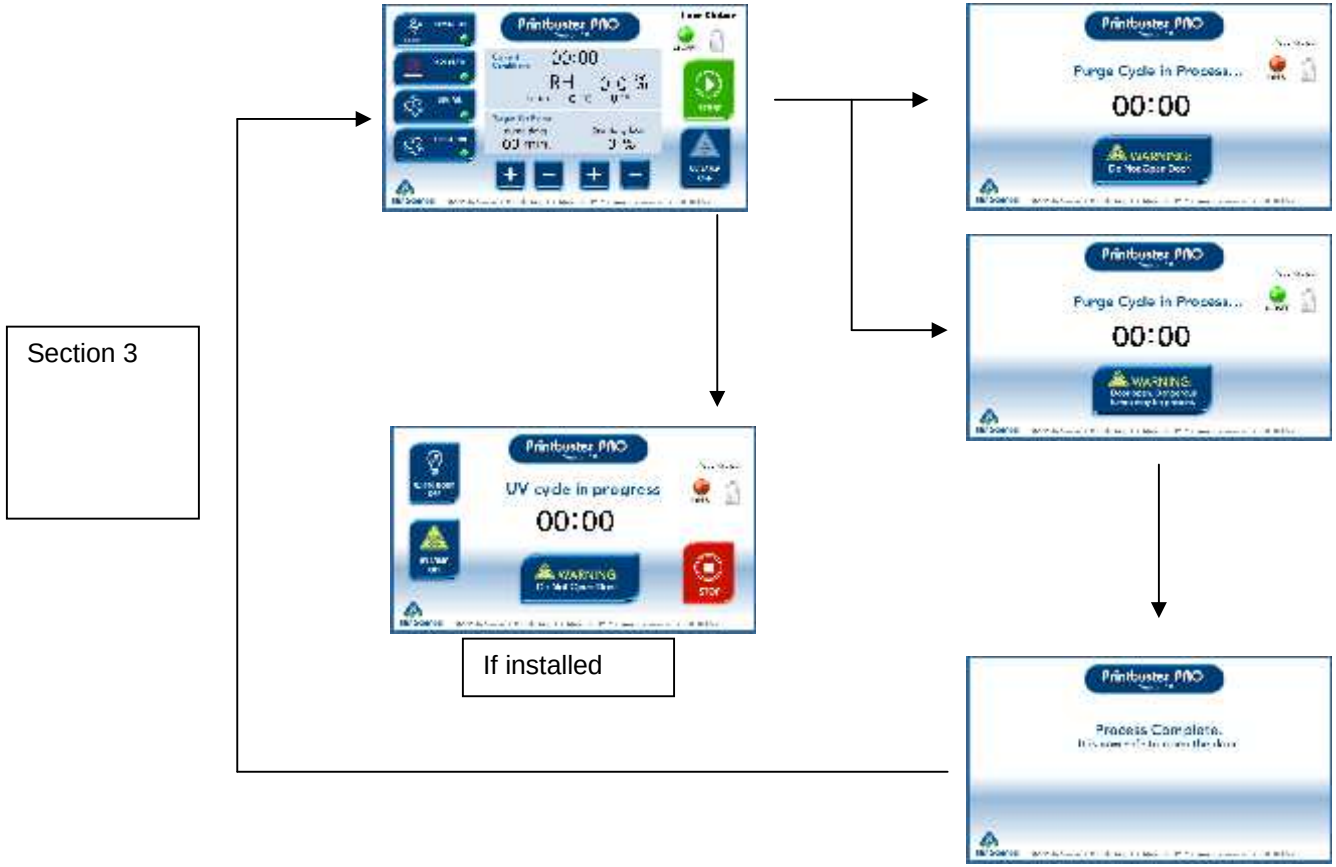
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WARNING
Printbuster PRO
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WARNING
STOP
Printbuster PRO
Process Complete.
Section 3
If installed

Section 4
Units
equipped
with
Systems
Test Feature

WARRANTY REGISTRATION AND CUSTOMER SATISFACTION SURVEY

Model		Serial #		Purchase Date	
Contact Person			Position:		
Company & Address					
Telephone			Fax:		
E-Mail					

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1. Were our quotations provided to you promptly and courteously?	5	4	3	2	1
2. Was your order correct when you received it?	5	4	3	2	1
3. Did you receive your order on time and without damage?	5	4	3	2	1
4. Do our products operate properly?	5	4	3	2	1
5. Do our products meet your requirements?	5	4	3	2	1
6. What is your overall judgement of Air Science?	5	4	3	2	1

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