A WORLDWIDE COMMITMENT

With offices worldwide, PACE is a recognized world leader in the development of solutions for the assembly and repair of highly advanced electronics. Our expertise extends back to the dawn of the modern electronics industry. In 1958, PACE introduced training programs for the repair of printed wire assemblies and soon after, revolutionized the industry by creating the first self-contained vacuum desoldering system.

Today, PACE continues to provide innovative solutions, products and training for the rework, repair and testing of printed circuit assemblies. Our unique capabilities and evolving vision have provided universal solutions for thru-hole and surface mount assembly and rework problems for the most advanced electronics.

Additionally, PACE manufactures Fume Extraction Systems to reduce exposure to harmful particulates and gases created from hand soldering operations. PACE Fume Extraction Systems effectively remove these contaminants from the worker’s breathing zone thereby reducing or eliminating health risks and improving productivity.

Our strong commitment and history of achievement has resulted in an unparalleled range of Assembly, Repair and Fume Extraction solutions to meet your needs whether working to ISO 9000, industrial, military or your own internal specifications. Whatever the challenge, PACE stands ready to help you set a new standard.

A CUSTOMER COMMITMENT

In 2001 the distinguished Frost & Sullivan Award for the World Surface Mount Technology Rework and Repair Equipment Industry was bestowed upon PACE.

The Frost & Sullivan Market Engineering Customer Service Leadership Award is presented to companies that have demonstrated superior responsiveness to customer needs and value-added support in technology and services.

PACE was selected based upon independent research with customers, key market participants and even our competition. This award reiterates PACE’s commitment to excellence from product concept to customer service in the field. Frost & Sullivan’s research recognizes that the key to PACE’s success in the industry is our interactive approach with customers to provide solutions and respond to end-user feedback when developing products.

In 2002 PACE was awarded World Class Status, signifying that PACE uses best practices in its design, development and manufacturing processes to provide the finest quality products to its customers at the lowest possible cost. The first Maryland based company to receive this coveted award, PACE stands alone in its market segment in achieving this highly regarded status.

SOLUTIONS FOR THE ELECTRONICS INTERCONNECTION PROCESS

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PACE FUME EXTRACTION SYSTEMS

WHY IS FUME EXTRACTION NEEDED?

It’s a fact... hazardous fumes in the working environment result in increased absenteeism, employee turnover, worker’s compensation claims and lost productivity. Medical research has confirmed an increased incidence of occupational asthma, chronic bronchitis, allergic reactions, contact dermatitis and other health related effects associated with exposure to flux fumes. The substances in flux fumes are regulated by international health and safety agencies and many have been designated as Occupational Sensitizers which means that exposure should be eliminated or reduced to as low levels as possible. Where manual soldering is being performed or where solder-pots/fountains are utilized, hazardous fumes are produced and workers need to be protected from them.

FACT: EXPOSURE TO SOLDER FUMES LEADS TO RESPIRATORY ILLNESS

When rosin-based or rosin-containing fluxes are heated, a substance called colophony is produced, which is one of the major causes of occupational asthma. In order to reduce exposure to colophony, rosin-based fluxes have been exchanged for non-clean or synthetic fluxes that contain no rosin or very low percentages. While this reduces or eliminates exposure to colophony, new chemical irritants may be introduced into the work place, many of which pose a more substantial threat to workers. Over 95% of the total fume products from rosin-based fluxes are in the form of particulates. Chemical exposure from flux fumes varies widely and is dependent on the chemical composition of the flux. Non-roin or low-roin fluxes use chemically aggressive substances such as acids, solvents, or alcohols in place of rosin to improve the cleaning action of the flux. This is also true for Lead Free solders.

FACT: MATERIAL SAFETY DATA SHEETS FOR FLUXES RECOMMEND THE USE OF LOCAL EXHAUST VENTILATION SYSTEMS

The Health effects caused by exposure to flux fumes tend to be forms of respiratory illness and contact dermatitis. However, since the components of flux fume are often designated as occupational sensitizers, chronic or prolonged exposure increases the severity of health effects. PACE Fume Extraction is a key element in protecting workers from being exposed to flux fumes!
**ARM-EVAC 50 & FX-50**

**FUME EXTRACTION FOR THE BENCHTOP**

**ARM-EVAC 50**

The Arm-Evac 50 is a unique, portable, cost-effective, benchtop fume extractor that provides wide area fume extraction or highly efficient source capture at two points using the optional arm attachment. The Arm-Evac 50 features operator adjustable airflow, quiet operation and a wide variety of filters to meet the needs of virtually any application.

**PORTABLE FUME EXTRACTION SYSTEMS FOR 1 TO 4 WORKSTATIONS**

**ARM-EVAC 105/200**

The best protection from harmful fumes in its price range. The Arm-Evac 105 is portable, compact and can be easily placed on or under a workbench. The unit includes a brushless motor and the housing is made of heavy duty, 20-gauge steel. An inlet cap is provided to seal the unused inlet if only one flex arm is used.

**FX-50**

The FX-50 Fume Extractor is designed to remove solder/flux fumes from the operators breathing zone by drawing harmful fumes through a carbon impregnated, foam filter. The FX-50 features high airflow, quick and easy filter change-out, pre-drilled holes for variable mounting, three height adjustments and swivel action.

**ARM-EVAC 200**

The Arm-Evac 200 is designed to meet the needs of light duty production as well as rework and repair operations. Lightweight and compact, the Arm-Evac 200 installs in minutes. A wide variety of collection accessory options and filters are available. An optional silencer/mobile cart is also available.
**ARM-EVAC 250/500**

**PORTABLE FUME EXTRACTION SYSTEMS FOR 1 TO 6 WORKSTATIONS**

**ARM-EVAC 250**

The Arm-Evac 250 is ideal for heavy-duty operations that need high capacity and continuous particle filter monitoring. Incorporating microprocessor technology, an easy-to-read graphical LED filter condition monitor changes from green to yellow to red as the filter becomes clogged. Additionally, airflow sensors increase power to the motor as filters become blocked to assure peak performance. The filter monitoring system self-calibrates using a key-switch on the front panel and an audible alarm alerts the operator when a filter change is required. A three-position motor speed switch is also on the front panel. A wide variety of collection accessory options and filters are available. An optional silencer/mobile cart and remote benchtop controller are available. See below.

**ARM-EVAC 500**

The Arm-Evac 500 is perfectly suited for high performance cellular manufacturing activities and provides fume extraction for up to 6 workstations. This unit boosts a high airflow motor pump with an effective three-stage filtration system. Incorporating microprocessor technology, an easy-to-read graphical LED filter condition monitor changes from green to yellow to red as the filter becomes clogged. The filter monitoring system self-calibrates using a key-switch on the front panel and an audible alarm alerts the operator when a filter change-out is required. A wide variety of collection accessory options and filters are available.

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**FILTRATION OPTIONS**

**PRE-FILTER**
- High Capacity Pre-Filter
- General Purpose Filter
- Cleanroom Filter
- High Capacity Economy Filter
- Adhesive Filter

**ECONOMY FILTERS**
- Recommended for soldering applications where cost-effective solutions are required. Ideal for applications where coarse dust is generated.

**CLEANROOM FILTERS**
- Recommended for applications in cleanroom environments or where the highest filtration efficiency is required.

**HIGH CAPACITY FILTERS**
- Recommended for soldering applications where heavy volumes of fumes are generated or where operations are running 3 shifts. Filter contains additional filtration media and will last longer.

**ADHESIVE FILTERS**
- Recommended for any benchtop application utilizing adhesives, solvents, or cleaners used in small quantities and not in open containers or "batches".

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**FILTER SELECTION CHART**

The following chart is a quick reference guide for PACE Filtration Systems. Simply select your fume extraction central filtration unit and the type of filter you need to identify the part number of the filter. (Bold part numbers indicate standard primary filter in Central Filtration Unit)

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**PACE’s Filtration Systems have been specifically designed for application in the electronics industry. A wide variety of filtration options are available for use with PACE Fume Extractors ensuring that you always have the right filter for the job. Filtration systems for soldering applications are comprised of three filters. As fumes are collected, they first encounter the Pre-Filter, which is a lower efficiency particle filter that is used to protect the primary filter from large particles, extending the life of the primary filter. Next is the Primary Particle Filter which is a particulate filter with large surface area having efficiency ratings of 85% and higher. A variety of filtration efficiencies are available to suit your needs. Lastly, a Gas Filter is included to eliminate any hazardous gases that may be present.**

PACE’s gas filters use high-grade activated carbon or they combine adsorptive and chemisorptive technologies to maximize effectiveness. To fully understand your gas filtration needs, always consult your Material Safety Data Sheet.

The Arm-Evac 50, 105, 200 & 250 use "Combo Filters" which means that the Primary and Gas filters are contained in one filter cartridge. The Arm-Evac 500 uses separate Primary and Gas filters which need to be changed individually. Pre-Filter should be inspected at least weekly. When they become clogged, they should be replaced immediately to maximize primary filter life.

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## ESD FLEX-ARM & METAL FLEX ARMS

### ESD SAFE FLEX-ARM

The most versatile and economical collection accessory (includes round endpiece)

**SPECIFICATIONS**
- **ESD SAFE FLEXARM**
  - **PART NUMBER**: 8886-0750
  - **ESD RATING**
    - Surface Resistivity: 1.00E3 Ohm
    - Volume Resistivity: <6.00E2 Ohm-cm
  - **LENGTH/DIAMETER**: 95mm (3.6")/75mm (3")
  - **MOUNTING**: Directly onto Fume Extractor or uses optional Bench Mounting Bracket
  - **STANDARD ENDPiece**: Round

**Optional Endpieces**
- **A** Round Endpiece for omni-directional fume collection
  - Part Number: 8886-0792
- **B** Collection Tube Endpiece for focused and pin-point fume collection
  - Part Number: 8886-0793
- **C** Cowl Endpiece for high volume laminar flow fume extraction
  - Part Number: 8886-0794
  - Extension Tube for ESD Flex-Arm 305mm (12") long
  - Part Number: 8886-0790 (not shown)

#### ESD Safe Flex-Arm Quick-Mount Bench Mounting Bracket Kit

(Part Number 8886-0745) allows the ESD Safe Flex-Arm to be mounted virtually anywhere. Quick Mount clamp allows for arm and bracket to be repositioned in seconds. Kit includes 25m (8') of 75mm (3") ESD Flexible Hose.

#### ESD Safe Flex-Arm Kit

(Part Number 8886-0765) contains everything needed to mount an ESD Safe Flex-Arm to a workbench. The Kit includes:
- (1) ESD Safe Flex-Arm (Part Number 8886-0750), (1) Quick-mount Bench Mounting Bracket Kit (Part Number 8886-0745).

### 45mm (1.75") STATIC-SAFE METAL FLEX-ARM

Conserves Benchtop space
- Rugged stainless steel construction, 0.9m (3') long
- Complete with unique Fume Scoop endpiece and Bench Mount Flange
- P/N 88860429

Optional Locking Adjustable Airflow Controller & Bench Mounting Flange
- P/N 88860550

### 50mm (2") STATIC-SAFE METAL FLEX-ARM

Easy to move in and out of position
- High quality stainless steel construction, 0.9m (3') long
- Variety of endpieces available
- Includes Locking Adjustable Airflow Controller & Bench Mounting Flange
- P/N 88860505

Optional Locking Adjustable Air Flow Controller for 45mm (1.75") and 50mm (2") Flex Arm
- P/N 88860509

Bench Mounting Bracket for 45mm (1.75") and 50mm (2") Flex Arm
- P/N 88860552

### INSTALLATION TIPS

1. Metal Flex-Arms can be mounted directly to the workbench by cutting a hole in the benchtop or they can be mounted to the workbench by using the optional Quick-Mount Bench Mounting Bracket, part number 8886-0552.
2. To connect the Metal Flex-Arm to one 75mm (3") inlet on the fume extractor, part number 8886-0299, (2.5m (8') of ESD Safe Flexible Hose 75mm [3"] diameter with 50mm [2"] reducer) is required.
3. To connect two Metal Flex-Arms to one 75mm (3") inlet on the fume extractor, part numbers 8886-0299, (2.5m (8') of ESD Safe Flexible Hose 75mm [3"] diameter with 50mm [2"] reducer) & 8886-0592 Metal Flex-Arm Expansion Kit are required.

## ACCESSORIES & METAL FUMEFLO TABLE AND PLENUM

### METAL FUMEFLO WORKTABLE

The Metal FumeFlo Worktable is the newest innovation in fume collection devices. By combining laminar flow and downdraft containment, the Metal FumeFlo Worktable offers the maximum level of protection from hazardous fumes. The Metal FumeFlo Worktable is fitted with a heat resistant ESD safe work surface. The fumes are “pulled down” through the work surface or through the Plenum and drawn into the Central Filter Unit, filtered and returned to the work environment. The Metal FumeFlo Worktable is easy to install and relocate and preserves precious Benchtop space and is supplied with 2.5m (8') of 75mm (3") ESD Safe Flex Hose for easy connection to the Arm-Evac 105, 200, 250 or 500.

**SPECIFICATIONS**
- **METAL FUMEFLO WORKTABLE**
  - **PART NUMBER**: 8886-0220
  - **DIMENSIONS**: 105mm H x 455mm W x 620mm D (4.1" H x 17.9" W x 24.4" D)
  - **DOWNDRAUGHT AREA**: 4 10 x 3 10mm (1.61" x 1.22"
  - **PLENUM**: 95mm H x 450mm W (3.7" H x 17.7" W)
  - **EQUIPMENT SHELF**: 450mm W x 190mm D (17.7" W x 7.5" D)
  - **WEIGHT**: 4.8kg (10.7 lbs)

### METAL PLENUM

The Plenum is ideal for providing fume extraction to work spaces where soldering is being performed over a large area, such as at several locations on a large PCB. At 455mm (18") wide laminar airflow is supplied over the entire work area, protecting the operator from exposure to harmful fumes. The Plenum also preserves benchtop space as it provides a sturdy shelf. The Plenum is constructed from rugged 18 gauge steel and includes 2.5m (8') of 75mm (3") ESD Safe Flexible Hose for easy connection to the Arm-Evac 105, 200, 250 or 500.

**SPECIFICATIONS**
- **STATIC SAFE METAL PLENUM**
  - **PART NUMBER**: 8886-0346
  - **DIMENSIONS**: 1300mm H x 460mm W x 1300mm D (51" H x 18" W x 51" D)
  - **WEIGHT**: 3.7kg [8 lbs]
  - **MATERIAL**: 18 gauge steel
  - **INLET**: One 75mm [3"] inlet

### 50mm METAL FLEX-ARM ENDPICES

- **Static-Safe Fume Scoop for 50mm (2") Metal Flex Arm**
  - P/N 8886-0530

- **Stainless Steel Static-Safe 100mm (4") Nozzle for 50mm (2") Metal Flex Arm**
  - P/N 8886-0318

- **Stainless Steel Static-Safe 200mm (8") Nozzle for 50mm (2") Metal Flex Arm**
  - P/N 8886-0328

### METAL FLEX-Arm ENDPIECES

- **Optional Locking Adjustable Airflow Controller For 45mm (1.75") Metal Flex Arm**
  - P/N 8886-0509

- **Bench Mounting Bracket for 45mm (1.75") and 50mm (2") Flex Arm**
  - P/N 8886-0552

- **Extension Tube for ESD Flex-Arm 305mm (12") long**
  - Part Number: 8886-0790 (not shown)
ONE ARM-EVAC 105 OR ARM-EVAC 200 OR ARM-EVAC 250 PLUS LISTED ITEMS.

1. 2 x 75mm (3”) ESD Safe Flex-Arms (includes Round Endpiece) 8886-0730
1 x Cowl Endpiece 8886-0793

2. 2 x ESD Safe Flex-Arm Kits (refer to page 8 for kit contents) 8886-0763
1 x Cowl Endpiece 8886-0793

3. 2 x 50mm (2”) Metal Flex-Arms 8886-0550
1 x 50mm (2”) Fume Scoop 8886-0530
1 x 50mm (2”) Static-Safe 100mm [4”] Nozzle 8886-0378
2 x Bench Mounting Brackets 8886-0552
2 x 2.5m (8”) of 75mm (3”) Flex Hose with 75 [3’] to 50mm [2’] Reducer 8886-0299

4. 1 x 50mm (2”) Metal Flex-Arm 8886-0350
1 x 50mm (2”) Fume Scoop 8886-0350
1 x Bench Mounting Bracket 8886-0552
1 x 2.5m (8”) of 75mm (3”) Flex Hose with 75mm [3’] to 50mm [2”] Reducer 8886-0299
1 x Metal Plenum 8886-0366, includes 2.5m (8”) of 75mm (3”) Flex Hose

5. 2 x 45mm (1.75”) Metal Flex-Arms 8886-0429
2 x Bench Mounting Brackets 8886-0552
2 x 2.5m (8”) of 75mm (3”) Flex Hose with 75mm (3”) to 50mm [2”] Reducer 8886-0299
1 x Metal Plenum 8886-0366, includes 2.5m (8”) of 75mm (3”) Flex Hose

6. 1 x Arm-Evac SO 8889-0050
1 x Dual Arm Attachment 8886-0055

SIMPLY SELECT AND CONNECT!

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