

# PurgeAir

THE SINGLE SOLUTION FOR FUEL TANK ENTRY



DRAIN



VENT



MONITOR



ENTRY



**didsbury** est.1941

Civil

# PurgeAir

Didsbury Engineering Co Ltd - part of The MEL Group

## PurgeAir - Developed in partnership with Airbus

The **PurgeAir** is an intrinsically safe fuel tank entry system which allows safe entry into the hazardous environment of an aircraft's fuel tank. As aircraft fuel tanks also contain vital ancillary equipment, access is often required in order to carry out inspection and maintenance programmes.

### The PurgeAir is proven to gain entry to an aircraft fuel tank within 1 hour.

When positioned alongside the aircraft the container forms the control centre for the operation.

When entering and performing maintenance on an integral fuel tank, all fuel must be emptied from the tank and strict safety procedures must be followed. Fuel vapours must be purged from the tank and respiratory equipment must be used by the technician.

### Key Benefits

- 1 Contains all the equipment required to quickly and safely enter an aircraft fuel tank.
- 2 Gain entry to an aircraft fuel tank within 1 hour.
- 3 Includes a completely self sufficient breathing air system which supports upto 4 users and can be supplied from a shop air supply.
- 4 Residual fuel removal can be completed in a matter of minutes as opposed to hours / overnight when gravity draining.
- 5 Trials have proven that multiple tanks can be vented at the same time with vapour levels being reduced to levels low enough for entry in under an hour.
- 6 The Jet-Vac Puddle system quickly removes any residual fuel around internal structures.
- 7 Can be configured to be powered by a single connection to the onsite hangar air supply.



The **PurgeAir** is available on all Narrow and Wide Body Passenger Airlines, Executive Jets, Turboprop and Cargo Transporters. Manufacturers include;

- AIRBUS
- BOEING
- COMAC
- EMBRAER
- IRKUT



Over 100 PurgeAir systems sold worldwide to customers including;

- AIR ALGERIE
- AIRBUS
- AEROLÍNEAS ARGENTINAS
- BOEING
- COLOSSUS
- DELTA
- EMIRATES ENGINEERING
- ETIHAD AIRWAYS
- GULF AIR
- HAECO
- HNA TECHNIC
- JOB AIR TECHNIC
- KENYA AIRWAYS
- LUFTHANSA TECHNIK PHILIPPINES
- SEPANG AIRCRAFT ENGINEERING
- SIA ENGINEERING COMPANY
- SINGAPORE AIRLINES
- SOLAIR
- THAI
- TRANSWORLD
- VIETNAM AIRLINES

Using our many years of design experience we deliver innovative solutions that are designed with the end user solely in mind.

The PurgeAir is available in 3 variants;

**PurgeAir 1** provides the complete fuel tank entry system which includes everything required to DRAIN, VENT, MONITOR and ENTRY to safely work in an aircraft's fuel tank.



**PurgeAir 3** provides the sole ability to VENT fuel tanks on aircrafts of all sizes, from single seaters to super jumbos.



**PurgeAir 2** provides the ability to DRAIN, VENT and MONITOR fuel tanks on aircrafts of all sizes. It is also provided with suitably rated ancillary equipment to aid with any maintenance task within the tank.



**Standard equipment**  
Additional equipment available on request

- Venturi or ATEX fan air mover
- Anti-static ducting
- Couplings
- Aux hose or ATEX extension leads
- Aircraft specific tank adaptors
- Pump through water drain / fuel sump points
- Puddle vacuum
- Calibrated gas detectors  
CSA Class I, Division 1, ATEX and IECEx Zone 0
- Portable lighting  
ATEX and IECEx Zone 0
- Earth provisions
- Breathing apparatus
- Communications system  
ATEX Zone 0 and Factory Mutual Class I, Div 1
- Rescue / comfort mats
- Aluminium container with fork pocket
- Trailer
- Braked castors

|  | PurgeAir 1 | PurgeAir 2 | PurgeAir 3 |
|--|------------|------------|------------|
| Venturi or ATEX fan air mover  | ●          | ●          | ●          |
| Anti-static ducting  | ●          | ●          | ●          |
| Couplings  | ●          | ●          | ●          |
| Aux hose or ATEX extension leads   | ●          | ●          | ●          |
| Aircraft specific tank adaptors  | ●          | ●          | ●          |
| Pump through water drain / fuel sump points                                | ●          | ●          | —          |
| Puddle vacuum  | ●          | ●          | —          |
| Calibrated gas detectors<br>CSA Class I, Division 1, ATEX and IECEx Zone 0 | ●          | ○          | —          |
| Portable lighting<br>ATEX and IECEx Zone 0                                 | ●          | ●          | —          |
| Earth provisions   | ●          | ●          | —          |
| Breathing apparatus  | ●          | —          | —          |
| Communications system<br>ATEX Zone 0 and Factory Mutual Class I, Div 1     | ●          | —          | —          |
| Rescue / comfort mats  | ●          | ○          | —          |
| Aluminium container with fork pocket                                       | ●          | ●          | ●          |
| Trailer  | ●          | ○          | —          |
| Braked castors   | —          | ○          | ●          |

● Standard — Not available ○ Optional

The following procedure will allow safe and efficient fuel tank entry within one hour.



### Static Discharge

Using the retractable discharge reels, the aircraft and all auxiliary components can be safely earthed through the **PurgeAir** System.



### Breathing Apparatus

Breathing apparatus for 4 personnel (2 operative, 2 back-up safety personnel) with filtration and air quality testing allowing safe access into the tank.



### Fuel Draining

Fuel is pumped from the fuel tanks through the water drain valves. This is done at a rate of up to 110 ltr/min using the pneumatic pump through the reel mounted fuel hose and an aircraft specific tool.



### De-puddle

Jet-Vac system allows rapid de-puddling of residual fuel from the tank.



### Fuel Tank Venting

Purging and ventilation is carried out using Venturi air movers. Anti-static ducting allows the system to be set up quickly for any tank configuration. Large wing tanks can be purged to a safe level within 1 hour. Continuous ventilation can then be applied during tank maintenance operations.

Optional ATEX Electric Fan as an alternative.



### Key Operations

Auxiliary equipment such as Lighting Kit, Communications Kit, Rescue Mats and Gas Detectors, allow the tank entrant to work safely and efficiently within the confines of the aircraft fuel tank system; allowing a tank rescue to be mounted should the need arise.



## Training Course

The **PurgeAir** 3-day training course is for up to 10 operators/maintainers.

The course ensures users are fully competent and confident to test, operate, maintain and safely use all the equipment contained within **PurgeAir**.

### Day 1

#### Introduction

- Purge-Air - Why?
- Purge-Air - Overview
- Purge-Air - Practical 1 Introduction and Overview
- Pre-Entry Preparations
- Purge-Air - Practical 2 Fuel Extraction Systems
- Purge-Air - Practical 3 Ventilation Systems
- Review and Questions

### Day 2

#### Introduction

- Flammable Atmospheres, Detection and monitoring
- Toxic Atmospheres, Control of Exposure with BA
- Purge-Air - Practical 4 BA System Preparation
- Purge-Air - Practical 5 BA System Use
- Review and Questions

### Day 3

#### Introduction

- Purge-Air - Practical 6 BA System Use 2
- Purge-Air - Practical 7 Use of communication System
- Purge-Air - Practical 8 Ancillary Items
- Purge-Air - Practical 9 Pre-Entry Set up
- Purge-Air - Practical 10 Simulated Tank Entry Exercise
- Purge-Air Maintenance and Testing
- Review and QuestionsAt



## Servicing / Aftercare Support

Didsbury Engineering fully understand that our customer's operational equipment needs to be robust, reliable, in prime working order and supported by a network that is both accessible and knowledgeable.

Didsbury Engineering have a dedicated service and repair team for **PurgeAir** systems, with the sole aim to fulfill our customer's service and repair requirements to the highest standards of quality and reliability.

Didsbury Engineering offer a comprehensive aftercare support and maintenance package for the **PurgeAir** system.

Our expertly trained personnel can support all future on-site requirements. Alternatively the **PurgeAir** system can be shipped back to Didsbury Engineering and have a full overhaul performed.

The **PurgeAir** system requires regular maintenance and servicing as the safety of technical personnel is paramount when carrying out maintenance and inspection programmes using the equipment contained within the **PurgeAir** system.

Service requirements include;

Semi-annual Calibration of Gas Detector Kit

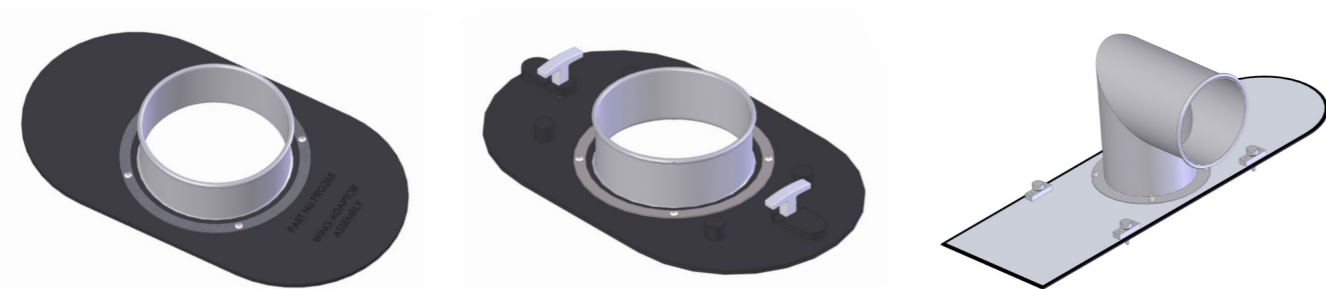
Annual service of **PurgeAir** system, in accordance with the operator and maintenance manual.

Gas Detector Calibration and Test Kit; suitable for pre-use testing and six monthly calibration.

The PurgeAir System has been developed to be used on a wide variety of Civil Aircraft.

When entering and performing maintenance on an integral fuel tank, all fuel must be emptied from the tank and strict safety procedures must be followed. Fuel vapours must be purged from the tank; Didsbury Engineering has developed an extensive range of wing blade and central tank adaptors to interface with the fuel tank access panels when venting an aircraft. Please see below for examples.

Didsbury Engineering can develop any specific adaptors required to integrate seamlessly with PurgeAir.

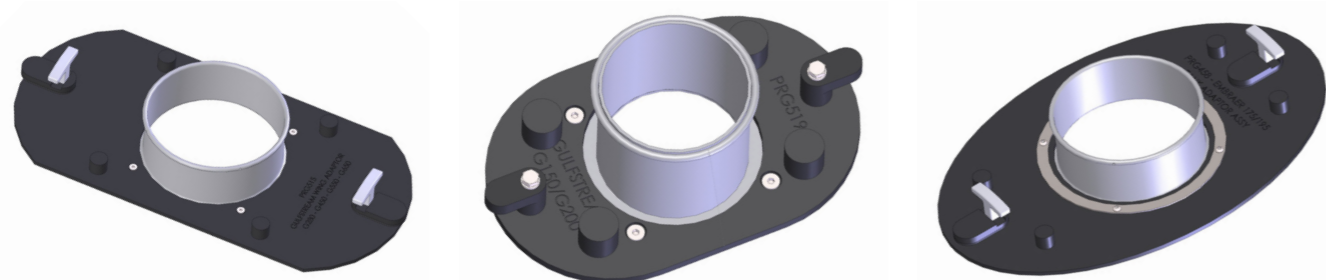


**Airbus**  
A300-600, A310, A318, A319, A320, A321, A330, A340, A350, A380

**Boeing**  
B737, B747, B757, B767, B777, B787

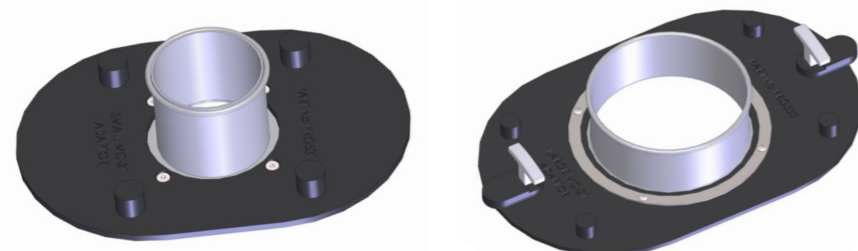
**Sukhoi**  
Superjet 100

**Bombardier**  
Q400, C-Series, CRJ200, CRJ700, CRJ900, CRJ1000



**Gulfstream**  
G150, G200, G280, G450, G550, G650

**Embraer**  
145, 175, 195



**Irkut**  
MC-21

**Comac**  
ARJ21, C919

The PurgeAir is an established system routinely used around the world for safe and fast fuel tank entry.



### Customer Testimonials

*"Very pleased with all aspects of the system, air movers, connectors, breathable air equipment, residual fuel vacuum equipment, safety mats, lighting and communication equipment etc.*

*All equipment required is conveniently located within the container. In our opinion the total package has three key benefits, improved safety, significant time and cost reductions.*

*Residual fuel can be sumped within 15 minutes and centre tank / wing tanks vented on most aircraft within 45 minutes. Engineers are consistently able to enter tanks safely within an hour.*

*Thank you for your support, we value the excellent working relationships that we have with Didsbury".*

**Aircraft Engineer - Thai Airways**

*"On behalf of our team of engineers, management, colleagues and the complete staff involved, please allow me to express my big thanks and appreciation for all your support and particularly for your Purge-Air System.*

*Its efficiency and serviceability are excellent! The benefits and cost savings since we started with Boeing 737 aircraft fuel tanks overhaul and maintenance are incredible".*

**Purchasing Manager - Job Air**

*"We have been using the Didsbury kit for a few years now and have found it to be essential kit for any jobs that involve fuel tank entry.*

*I would say that the Didsbury kit has played an essential part over our winter program for both the safety and comfort of our engineers whilst working in fuel tanks".*

**Lead Engineer - UK Airline**

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