



# An Extraordinary Company

- Passing the **\$US 60 Million** supply mark in the last five years
- BGSE has established dominance in the **Supply of Military Programs** for PCAir and 400 Hz. (F-35 / F-16)
- Integrated distribution systems with the most advanced **distribution opportunities**
- And now introducing the “**Best**” PCAir Hose Retriever to the Market.

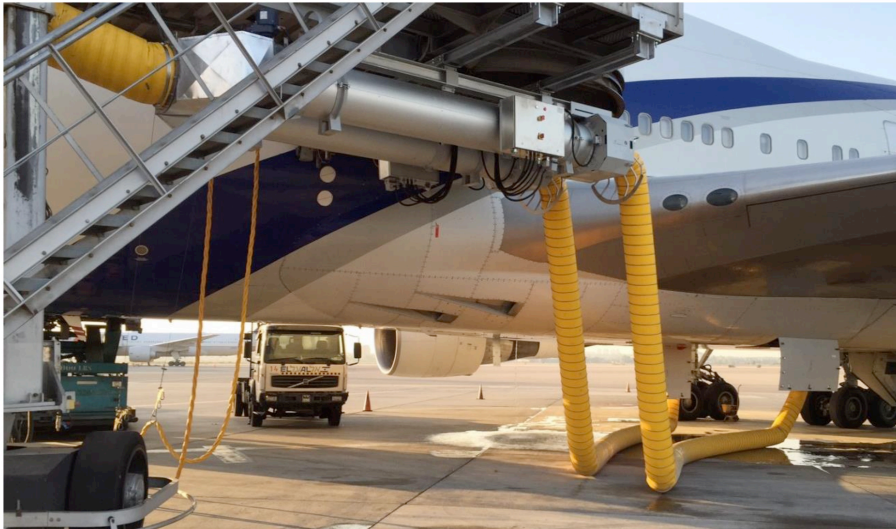


# The Extraordinary



## PCAir Hose System

- **June 01, 2019:** BGSE obtains all rights in the Western Hemisphere for the BGSE COOL JET® Hose Retriever.



- A 20-year design advance
- No slow, complicated mechanical transmission
- Significantly reduced pressure and thermal losses
- Compact size allows for several installation options
- A MAJOR advance on design features

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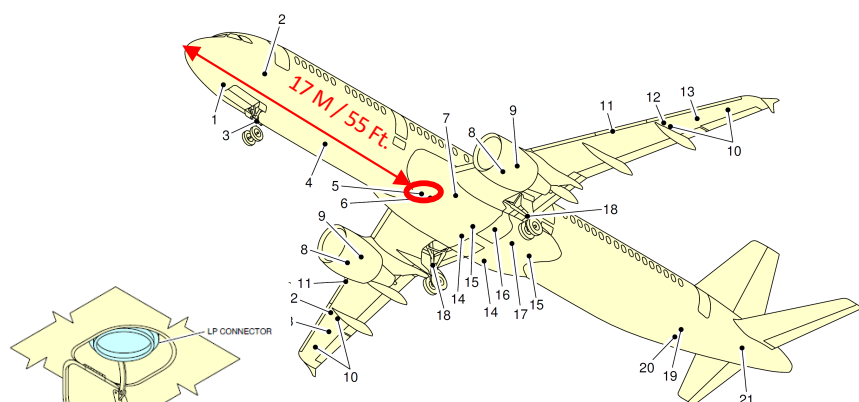
# Where is the PCAir Connector?

## 18M / 58 Ft Aft on Nose of Aircraft



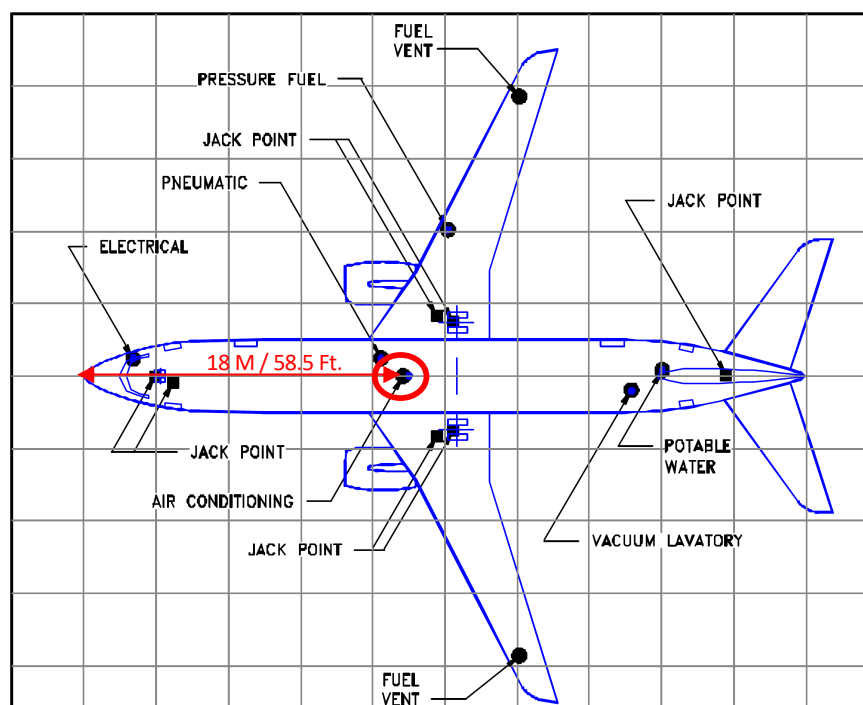
AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

\*\*ON A/C A321-100 A321-200 A321neo

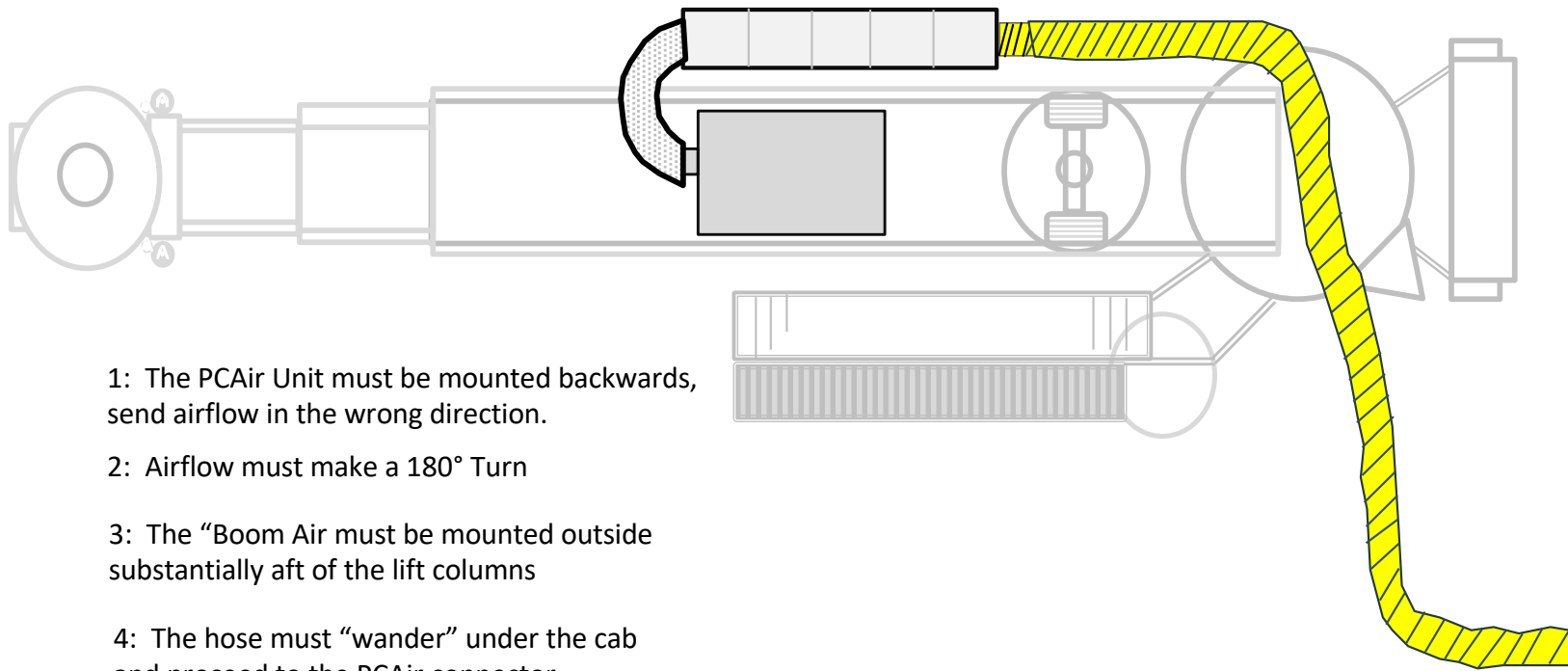


- |   |   |
|---|---|
| 1 - GROUND ELECTRICAL POWER CONNECTOR           | 12 - OVERWING REFUEL (IF INSTALLED)   |
| 2 - OXYGEN SYSTEM                               | 13 - NACA VENT INTAKE   |
| 3 - NLG GROUNDING (EARTHING) POINT              | 14 - YELLOW HYDRAULIC-SYSTEM SERVICE PANEL                                  |
| 4 - POTABLE WATER DRAIN PANEL                   | 15 - BLUE HYDRAULIC-SYSTEM SERVICE PANEL                                    |
| 5 - LOW PRESSURE AIR PRE-CONDITIONING           | 16 - ACCUMULATOR CHARGING (GREEN SYSTEM) AND RESERVOIR DRAIN (GREEN SYSTEM) |
| 6 - HIGH PRESSURE AIR PRE-CONDITIONING          | 17 - GREEN HYDRAULIC-SYSTEM SERVICE PANEL                                   |
| 7 - REFUEL/DEFUEL INTEGRATED PANEL              | 18 - MLG GROUNDING (EARTHING) POINT   |
| 8 - IDG/STARTER OIL SERVICING                   | 19 - WASTE WATER SERVICE PANEL  |
| 9 - ENGINE OIL SERVICING                        | 20 - POTABLE WATER SERVICE PANEL  |
| 10 - OVERPRESSURE PROTECTOR                     | 21 - APU OIL SERVICING  |
| 11 - REFUEL/DEFUEL COUPLINGS (OPTIONAL-LH WING) |   |

### 5.4.10 GROUND SERVICING CONNECTIONS MODEL 737-800 WITH WINGLETS, 737 BBJ2



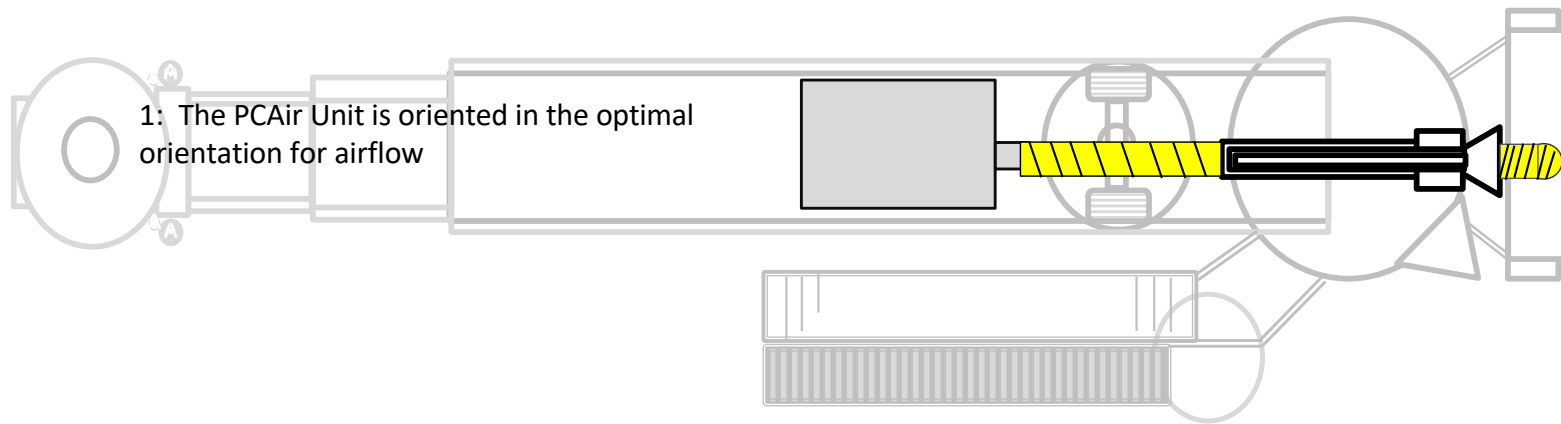
# The “OLD” way to install the PCAir Unit & Retriever



**THE RESULT:** Double the Pressure and Thermal loss potential of the **BGDE CoolJet®** Hose Retriever system.



# The “NEW” way to install the PCAir Unit & Retriever



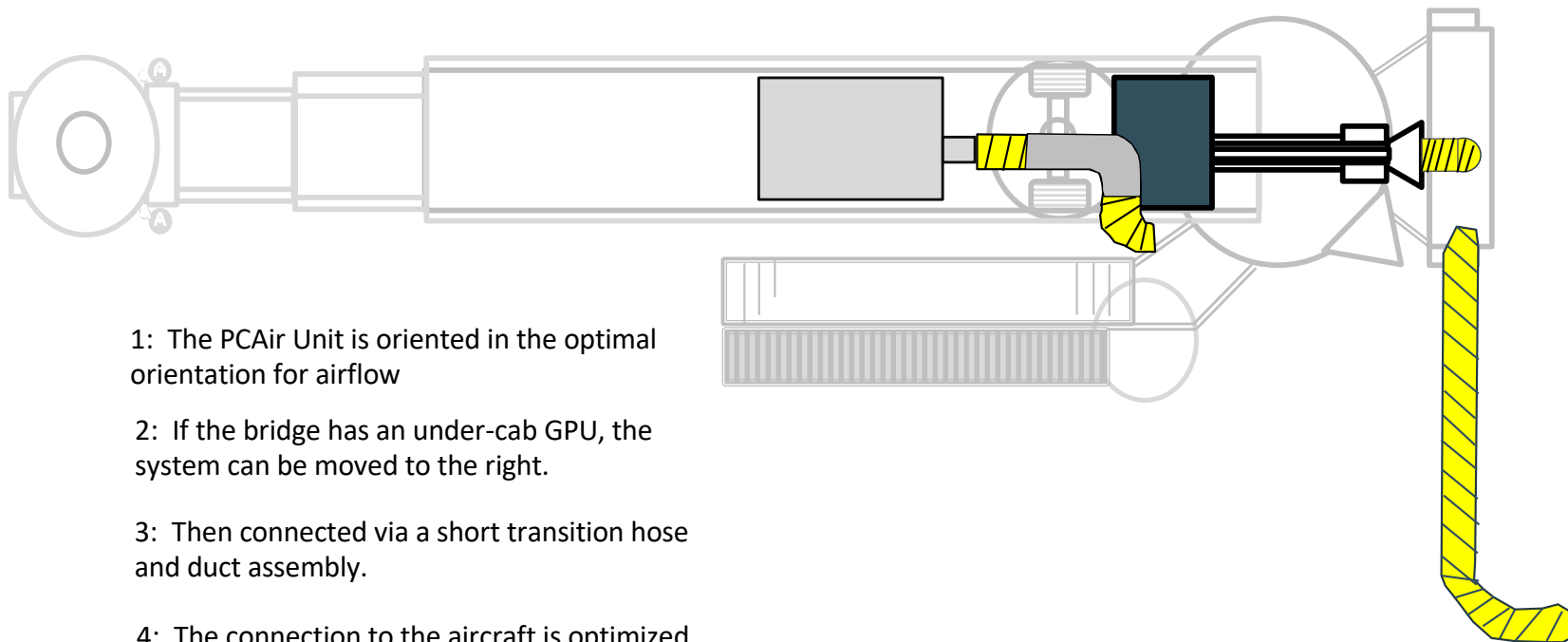
2: If the bridge does not have an under-cab GPU, the system can be mounted under the cab.

3: And connected directly to the PCAir unit.

**THE RESULT:** Pressure and Thermal loss potential reduced 50% of the **BGDE CoolJet®** Hose Retriever system.



# The “NEW” way to install the PCAir Unit & Retriever



**THE RESULT:** Pressure and Thermal loss potential reduced 50% of the **BGDE CoolJet®** Hose Retriever system.







## PCAir Hose Retriever

The most advanced and innovative PCA hose retriever on the market. Designed based on a long study and field experience. To date, 270 units in service worldwide.

### EXCLUSIVE FEATURES:

- Drive head for extraction and retraction of the pipe with four gearmotors / belt drawers controlled by inverter, without mechanical transmission elements such as chains, gears, rotating shafts. The pressure exerted by the straps on the pipe is adjustable to maximize performance in every operating set-up and weather condition.
- External anodized aluminum tube to contain the air delivery pipe. Made in different lengths due to the required piping, it offers maximum corrosion resistance and an elegant aesthetic solution.
- Electric control and command panel in stainless steel, protection degree IP 65, installed at the bogie of the passenger loading bridge, to ensure simplicity of operation and maintenance. PLC control display on the front door. Equipped with control devices for the hose collector.
- Quick-release connectors to facilitate disconnection of the head or electrical panel.
- Horizontal sliding drive head to allow rapid replacement of the air delivery pipe.
- Long operating life of the air delivery hose. Verified in the field to be not less than two years of operation.

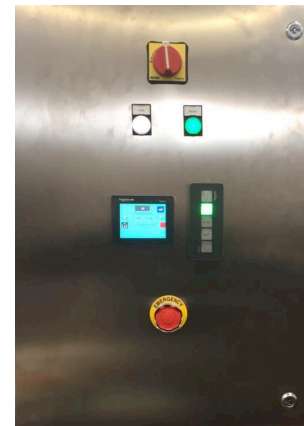




## PCAir Hose Retriever

### Electrical Panel

The electric command and control panel is installed at the foot of the gangway and contains the fixed control devices. The connections to the gearmotors and to the limit switches are made with quick-release connectors, which allow rapid disconnection of the electrical panel itself and of the drive head. The inverter that controls the gearmotor, the extension / retraction speed of the pipe and the intervention of the overload protection are in the electrical panel. The functionality of the tube collector is managed by a Schneider Electric PLC.



### Radio control:

The radio control transmitter, located on the aircraft adapter, contains the extraction and retraction controls of the pipe. The receiver is installed outside the electrical panel. The radio control system operates at a civil frequency of 870 MHz; at start-up, a single communication channel is established between transmitter and receiver, preventing interference and allowing the simultaneous operation of PCAir Hose Retriever.



### Limit switches

A proximity sensor stops the fully extended piping. A pair of photocell limit switches stop the totally retracted piping.

### Air delivery Hose/ Aircraft adapter


The flexible hose is fabric, coated in yellow PVC, with an internal insulating layer. The hose sections are joined together at both ends by a zipper and a protective band with Velcro. The BGSE COOL JET® hose retriever is equipped with 68 ft or 91 ft (21 or 28 m) of hose, with final conical reduction to 8 inch (200 mm) internal diameter. Different lengths are available on request. The first length of hose is fixed on a collar by means of a clamp.

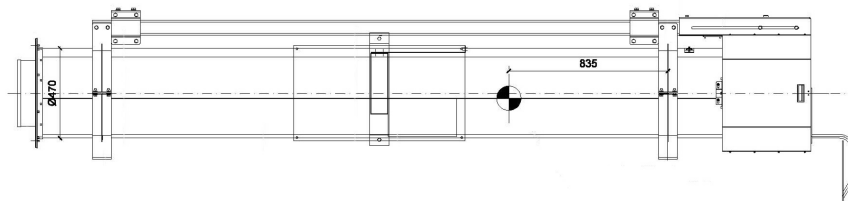






## PCAir Hose Retriever Technical Specifications

- Power supply: 3 x 480V + 60Hz 6A (other options available)
- Control panel: IP 65 in AISI 304 stainless steel
- PLC Schneider control with display on the front door of the panel
- Tension Motors powered by inverter
- Limit switch for "full extension" and "all re-section"
- Dock movement interlock
- PCA ON interlock
- Extension / retraction speed: Variable up to a maximum of 25 m / min
- Maximum pressure drop with flow rate 150 Kg / min: 1,200 Pa
- Temperature loss with full extension pipe: 2 ° C at 35 ° C 50% UR
- Safety interlock on the panel door
- Protection against overload (inverter)
- REM Device T3 radio control system with control panel on the aircraft adapter (other options available)
- Ion battery of lithium, minimum operating life 1000 h
- Sound and light movement alert (option)
- Operating temperature: from -20 to + 60 ° C
- Noise below 60 dbA Reference standard:
- Machinery Directive 2006/42 / EC Low Directive Voltage 2006/95 / EC Electromagnetic compatibility Electromagnetic Directive 2004/108 / EC Radio and Telecommunications Directive 99/5 / EC Air delivery hose:
- Intertek Field Labelling, Limited Product Certifications 
- Double layer of 1100 dtex polyester coated PVC, yellow color, 2 mm (5 mm optional) ) of internal insulation plus air gap, reinforcement spiral in galvanized steel with a pitch of 5 mm
- Tensile strength: 2700 N / 5cm (ISO 142/1)
- Thermal conductivity: 0.06 W / m ° K ( with 2 mm insulation)
- Fire retardant characteristics: M2 / B1 / BS / B-s2-d0 / NFPA 70
- Working pressure: 48 Inch WG 12,000 Pa
- Test pressure: 80 Inch WG (20,000 Pa)
- Aircraft adapter: 360 ° rotation system or equivalent
- Dimensions and weight: With 21 m of hose
- H 39 ½ Inches (1016 mm)
- Width 35 ½ Inch (910 mm)
- Length 158 ½ Inch (4059 mm)
- 1 000 lbs (500 Kg) with 91 Ft (28 m)





# TOTAL PCAir SOLUTIONS

