



# **NEXT GENERATION PROTECTION**

## **For Your Passengers, Cargo, Fleet, Aircraft, Investment, and Life**

### **PITOTSHIELD V2™ SMARTCOVER™ SAFETY PITOT COVERS**

### **INTRODUCTION SHEET**

The pitot tube is arguably the most vulnerable component of the Air Data System of turbine aircraft, and protecting it is a challenge. Pitot covers must be custom fit. Pitot covers must be heat resistant **and removed prior to system power-up**. Pitot covers must be highly visible. There must be no disincentive for pilots or ground-personnel to cover pitot tubes for fear of them not being uncovered prior to takeoff. For over a century these needs have continued unresolved until now. DeGross Aviation Technologies has developed the PitotShield V2™- the first Safety Pitot Cover that addresses these long-standing issues involving the Air Data System protection.

- Provides the features requested from numerous airlines/MROs.
- Systems Safety Engineered design protects the pitot tube from spiders, wasps, dirt, sand and other contaminants.
- Designed specifically for Turbine/Transport aircraft with automatic pitot tube heat.
- Save estimated \$50,000 to \$500,000 per year in maintenance costs.\*
- Will not melt and ruin a hot pitot tube during power-up for maintenance or power-up prior to take-off.
- Disengages and falls away harmlessly after power-up. (Aircraft with auto pitot heat)
- Disengages **BEFORE** the aircraft reaches the taxiway or runway and without pitot tube damage.
- **UNIVERSAL FIT. ONE SIZE** fits nearly all pitot tubes. Additional sizes for special pitot tubes.
- Easily installed/Removed by hand or, for out-of-reach pitot tubes, using our patented install device, eliminating the need for ladders.
- Unique feature: actually tightens up on the pitot tube if disturbed by wind or prop/jet-blast.
- No fabric to wear out and unravel or fibers to shed and contaminate the pitot tube.
- Impervious to solvents, avgas, and jet fuel.
- **REMOVE BEFORE FLIGHT (RBF)** Streamer Options: Red SAE/NAS Standard or Proprietary High-Visibility International Orange w/Night-Reflective Accent.

\* Fleet Airline/IATA Data-due to replacement of burned element/contamination in maintenance of each one hundred aircraft.



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Active-Release  
Videos



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### **WHY PITOTSHIELD V2™ SMARTCOVER™?**

- **SMART-PREVENTS FOULED PITOT TUBES IN MAINTENANCE**  
Auto-Releases 2 to 5 Minutes after Pitot Heat Activation
- **NO MORE REJECTED TAKEOFFS**
- **HEAT-RESISTANT**  
Made specifically for auto-heated pitot tubes
- **UNIVERSAL PROTECTION**  
One size fits nearly every aircraft
- **THE NEW STANDARD IN PITOT TUBE PROTECTION**





# NEXT GENERATION PITOT TUBE PROTECTION

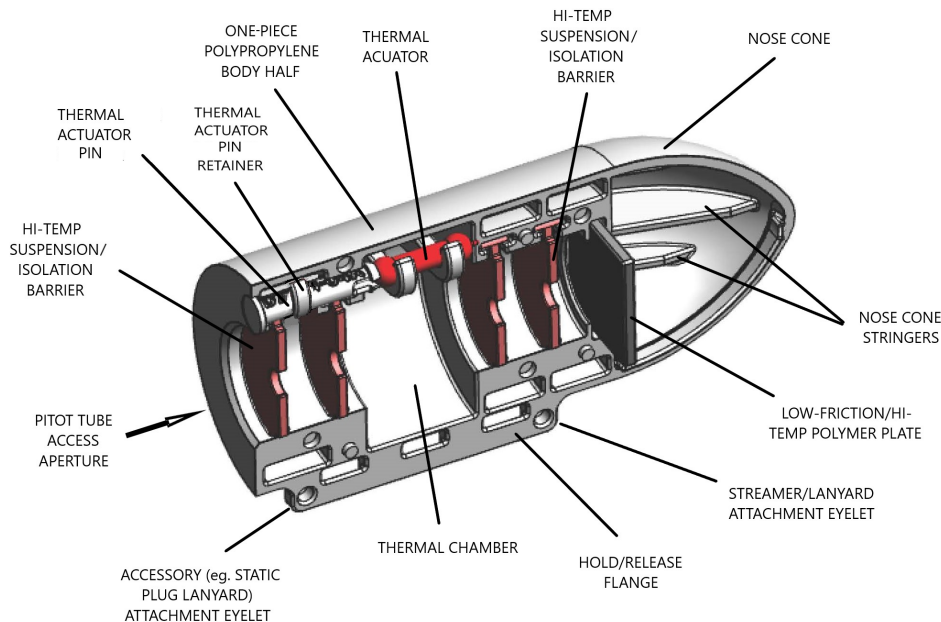
## PITOTSHIELD V2™ SMARTCOVER™ SAFETY PITOT COVERS Structural and Functional Overview



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Spec Sheet



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The PitotShield V2™ Smartcover™ consists of two major parts. First is a replaceable, upgradeable Remove Before Flight (RBF) Streamer with a nylon ring attachment. The second part is a polymer body manufactured as two major components using Selective Laser Sintering (SLS), an innovative additive manufacturing technology. Within the body is a patented heat-resistant suspension/isolation system with five distinct functions:

1. Several silicone elastomer isolation barriers suspend the polymer body from the pitot tube to prevent contact and melting of the polymer should pitot heat be activated with the pitot cover in place.
2. The barriers guide and hold the pitot tube tip against a flat, protective temperature-resistant fluoropolymer plate to ensure that no contamination infiltrates the pitot tube tip. Because of the flexing of the isolation barriers, once the pitot cover is placed fully onto the pitot tube, it cannot be released without increased reverse force sufficient to prolapse the barriers. To remove the pitot cover from the pitot tube, an initial holding force from the flexed barriers must be overcome until the barriers are prolapsed, at which point the pitot cover body can be readily slid forward off the pitot tube.
3. The physical flexibility of the silicone barriers provides one size pitot cover fitting 90+% of the various sizes and shapes of pitot tubes. We also have Short and Large versions for atypically short and large diameter pitot tubes.
4. The isolation barriers form a thermal chamber within the body surrounding the pitot tube. This chamber has a release actuator which, upon reaching a specified temperature, will trigger separation of the two body halves.
5. Simultaneously with release of the body, the isolation barriers aid ejection.

**Additional features of the PitotShield V2™ SmartCover™** are eyelets on either end of the lower hold/release flange. One eyelet is the attachment point for the RBF streamer while the other can be an attachment point for lanyards from static plugs and/or AOA covers to augment ADS System protection.

# PitotShield V2™ Spec Sheet

## Body 77TBU, 77TBL 77TBS

- Length... 5.2 in (13.2 cm) 4.23 in (10.7 cm)
- Diameter. 2.25 in (5.7 cm) 2.25 in (5.7 cm)
- Weight.... 4.25 oz (120 g) 3.5 oz (99 g)

DAT p/n 77TB\*4701 (ORANGE RBF)

DAT p/n 77TB\*64 (NAS RED RBF)



### Body Materials - Body Contains NO METAL

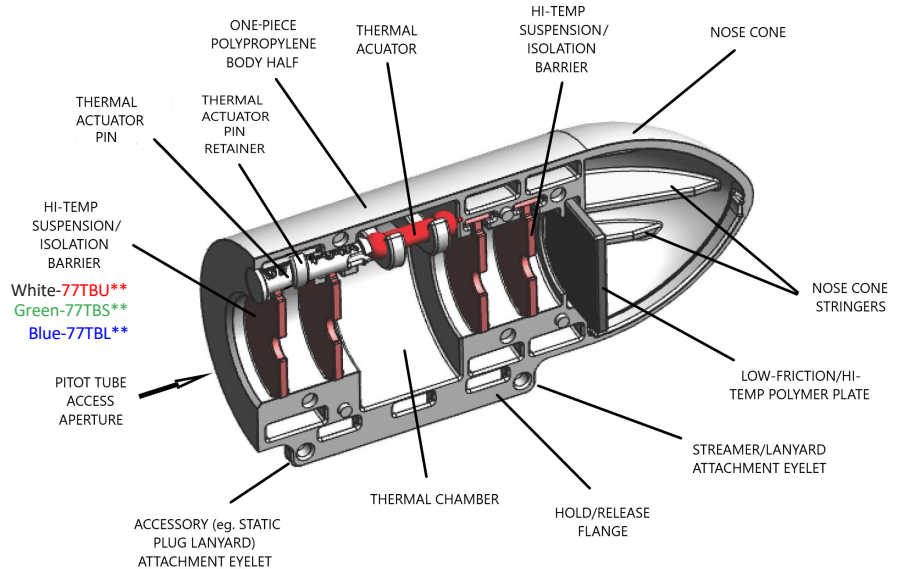
- Polypropylene (BASF PP1200) Laser Sintered
- Only Hi-Temp Silicone Contacts Pitot Tube Surface
- PTFE Polymer Protects Tip of Pitot Tube
- Thermal Actuator: Silica, Water-soluble hydrocarbon, Reactive Temp: 135°F/57°C
- Operational Temp -40°F/-40°C to 130°F/54°C
- Activation Temp Tested -4°F/-20°C to 130°F/54°C

### RBF Streamer Options

- Red SAE/NAS-DAT P/N 461756-24**
  - 24 in (70 cm) x 3 in (7.6 cm)
  - Brass Grommet/Nylon cord/Al crimp
- Proprietary Hi-Visibility DAT P/N 4701HVS**
  - International Orange
  - Reflective Accent for Night Visibility
  - 18.5 in (47cm) x 2.25 in (5.7cm)
  - Brass Grommet/Nylon cord/Al crimp
- Custom Streamers Available**

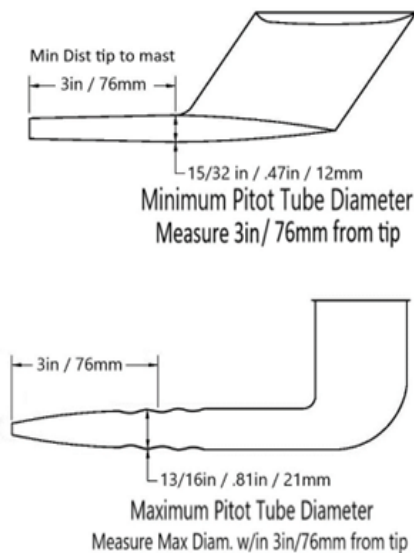
### Total Assembled Weight w/Streamer:

**STD & Large:** 4.75oz (135g); **Short:** 4.0oz (113g)



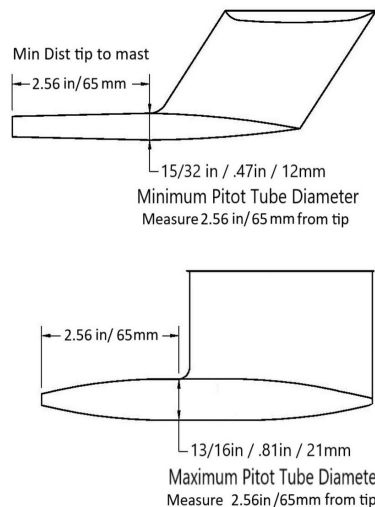
### PitotShield V2™ Standard Size

#### 77TBU\*\* Fit Parameters



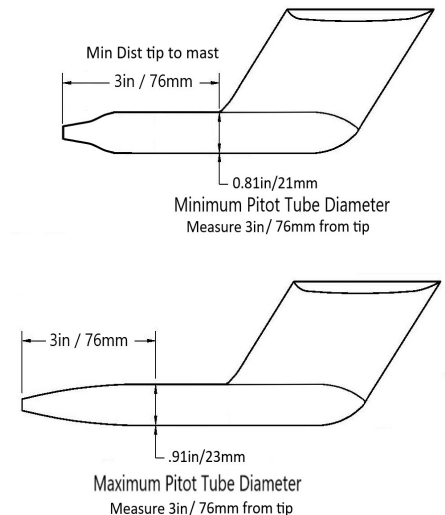
### PitotShield V2™ Short Size

#### 77TBS\*\* Fit Parameters



### PitotShield V2™ Large Size

#### 77TBL\*\* Fit Parameters



### APPLICATION/FITTING DETAILS

This **Standard-Size PitotShield V2™ Smartcover™** fits nearly all turbine aircraft round pitot tubes. If the tip of the pitot tube is less than 3in/76mm from the mast or the diameter at 3in/76mm from the tip is less than 0.47in/12mm, or the pitot tube diameter within three inches from the tip is greater than 13/16in (21mm), the **Standard PitotShield V2™ Smartcover™** will not fit.

### APPLICATION/FITTING DETAILS

This **PitotShield V2™-S (Short) SMARTCOVER™** fits round pitot tubes having a minimum length from the mast of 2.56in/ 65mm and a maximum diameter of 0.81in/21mm.

### APPLICATION/FITTING DETAILS

This **PitotShield V2™-L (Large) Smartcover™** fits pitot tubes with a minimum length from tip to mast of 3in/76mm and a maximum diameter from .81"/21mm to .91" within 3in (76mm) of the tip.