

Wipers NT windshield wiper/wash system

A CLEAR ADVANTAGE

The next generation of wiper technology

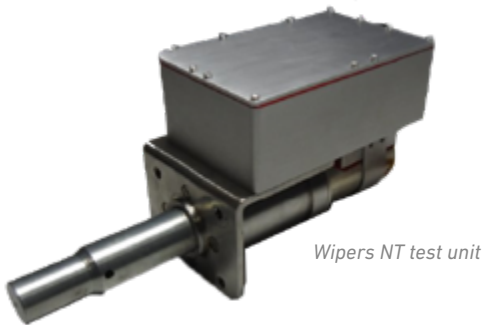


Collins Aerospace

RELIABLE AND DURABLE

Collins Aerospace Wipers NT windshield wiper/wash system is a revolutionary solution for cleaning aircraft windshields. This new technology is reliable, safe and cost-effective. The system consists of a software-based controller, reversible motor and composite beam blades. Give pilots the clear view advantage with Wipers NT on your aircraft.

Both rotary- and fixed-wing aircraft require a reliable windshield wiper system to maintain a clean windshield for safe operation. In addition to wiping water away, wash systems provide a spray of liquid to clean contaminants off the windshield, leaving a clear view for the pilot. Similar in design to the wiper system on an automobile, the aircraft version is designed to function in a much harsher environment including temperature extremes, aerodynamic loads, and high vibrations, all while meeting the highest standards of reliability.



Wipers NT test unit

A NEW GENERATION OF WIPER SYSTEM

Collins Aerospace has been a leader in windshield wiper/wash systems for decades, designing and producing many of the wiper systems used on both commercial and military aircraft. The first elements of Wipers NT are being designed and certified on an aircraft today. This system offers many new features to the aircraft designer along with improvements in reliability, weight, drag, power and cost.



Composite arms have been available from Collins Aerospace for several years and will continue to be part of our Wipers NT system, reducing system weight.

SOFTWARE CONTROL

Software control is one of the key elements of Wipers NT and Collins is completing development for its first application with qualification targeted for early 2021.

Collins Wipers NT system architecture can incorporate the control electronics with each individual motor or it can be designed with a single electronics control unit (ECU) separate from the wiper motors. This allows for more flexibility in the mounting scheme and fits the system into the smaller spaces typically available in the tight constraints near the windshield. Windshield wash functionality is available as an option.

Wipers NT offers improvements in reliability, reduced cost and reduced weight while offering many new features not previously available.

SOFTWARE CONTROL FEATURES

Incorporation of software control enhances many of the features that were available in the past and adds many new features, including:

- Ability to read aircraft parameters such as airspeed and automatically adjust wipe speed accordingly
- Improved tolerances on wipe angle by slowing the wiper speed near the edge of the wipe angle before reversing
- Incorporation of built-in test (BIT) and diagnostic capabilities to improve reliability and reduce downtime
- Opens the possibility for automated wiper control in the future, relieving the pilot of this task

OTHER ADVANTAGES OF WIPERS NT

In addition to making the pilot's job easier, Wipers NT provides cost and efficiency advantages as well, including:

- Less recurring cost
- Faster development times
- Weight decreased by approximately 10%
- Reliability increased by approximately 50%
- Improved power characteristics through reduced electrical noise/spikes
- Reduced drag
- More flexible space/volume requirements
- Reduced development cost through software parameter changes instead of hardware modifications

PLATFORMS

Collins windshield wiper/wash systems are on many of the rotary- and fixed-wing aircraft flying today, including:

- Sikorsky UH/MH-60 Blackhawk
- Sikorsky CH-53K
- Boeing AH-64 Apache
- Boeing 737
- Embraer E1 and E2
- Leonardo AW-139
- NHIndustries NH-90



*Collins Aerospace
windshield wiper system*

COLLINS IS A FULL SERVICE PROVIDER

We perform design, qualification, production and aftermarket service/support throughout the product lifecycle. We provide the entire system, including:

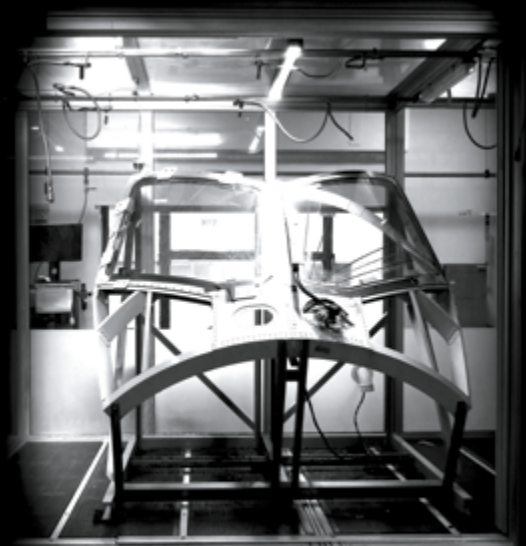
- Control electronics
- Motor-converter
- Arm
- Blade
- Wash reservoir
- Wash pump

Pilot/co-pilot synchronization is available with both the legacy and new systems. The wipers will synchronize within a few strokes when the pilots turn on their individual wipers at different times. Our systems are known for their proven performance and reliability which is why we have been chosen for so many follow-on derivatives of aircraft that used our system on earlier models.

We're focusing on the future

Collins Aerospace continues to invest in the infrastructure needed to be a leader in windshield wiper systems. A state-of-the-art rain simulation chamber was built to perform endurance testing on wiper parts under simulated rain conditions. We also recently purchased a new dynamometer for torque measurements and a thermal chamber for circuit card assembly burn-in. Thermal, structural, and computational fluid dynamics computer modeling is used to optimize wiper system designs before the initial build/test process.

In addition to the investments in hardware and support tools, we have multiple research and development projects underway in the area of windshield wiper systems as we push the product line to continually improve the value proposition for our customers.



Collins Aerospace rain chamber

To learn more, go to
collinsaerospace.com

Collins Aerospace

vince.lopresto@collins.com
collinsaerospace.com