

MSA Latchways® Solutions for Aerospace



*Because every life has a **purpose...***



The Latchways WinGrip® System, a vacuum-based fall protection solution for aircraft manufacturing and maintenance, can be fixed to wings, fuselage or stabilizers. Workers wearing full body harnesses attach to the system via work positioning ropes, enabling hands-free maintenance access. System is tested and rated for fall arrest, engineered with a safety factor of two, limiting load transferred to the aircraft structure.

WinGrip System at a Glance

- Lightweight and portable, anchors weigh less than 13.5 lbs. (6 kg)
- Suitable for wet or dry surfaces, inside hangars or on the apron
- Approved and used by all major aircraft manufacturers
- Easy to install and offers simple hands-free operation
- Inherently safe, even with fuel tanks open
- Runs on compressed air or nitrogen, no electrical requirement
- Independently tested to meet all relevant international standards
- No metal-on-metal contact to protect aircraft surface and eliminate sparking risk
- Guaranteed safety period with all systems
- Multiple-user cable-based system or single-user anchor options, tailored to customer needs
- Suitable for both heavy and light maintenance environments



WinGrip Single-User System

The WinGrip Range of Products

WinGrip Single-User System

Since 1999, the WinGrip System vacuum anchor has provided a single fall protection anchor point for one worker on wings, fuselage or stabilizers. Quickly and easily installed, highly portable single-user system is designed for line maintenance and other short-term, temporary work. Anchor is positioned and vacuum-locked in place, then used by a worker wearing a full body harness with safety lanyard and work positioning rope connected to the vacuum anchor.

Adjustable work positioning rope provides 10-ft. (3 m) safe working radius for comfortable hands-free movement. Two vacuum anchors can be used to triangulate and fix worker positioning.

System Benefits

- Ideal for short term access
- System installed and ready for use in minutes
- Additional users protected by simply adding additional WinGrip vacuum pad
- Easily upgraded to Lifeline System
- Two pads used together provide a restraint system even on smallest of aircraft

WinGrip Lifeline System

The WinGrip Horizontal Lifeline System allows access for as many as four workers along entire length of a wing or fuselage and is designed for construction, heavier maintenance or return operations. System consists of two end-anchor vacuum pads with cables spanning in between, and intermediate anchors used as needed to suit any cable length. Each anchor is positioned and vacuum-locked in place, followed by stainless steel safety cables connected and tensioned at one end.

Workers connect to cables using the unique Latchways shuttle, while employing full body harnesses and work positioning ropes. System allows hands-free movement along entire cable length; shuttles glide over intermediate anchors.

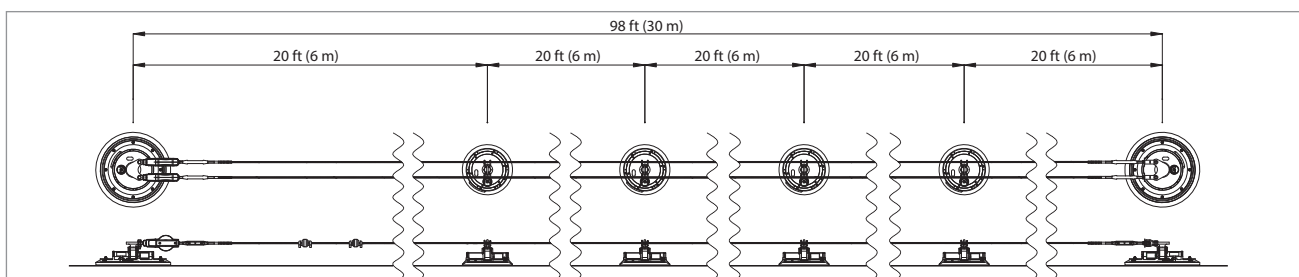
System Benefits

- Available in any length to suit any wing
- Ideal for heavy maintenance / longer access requirements
- As many as four users per system
- Fall arrest-rated
- Reliable method of installation and strip down
- Provides full access to any wing without disconnection
- Hands-free operation
- Engineered system



WinGrip Lifeline System

Typical Layout of an MSA Latchways WinGrip Twin Line System

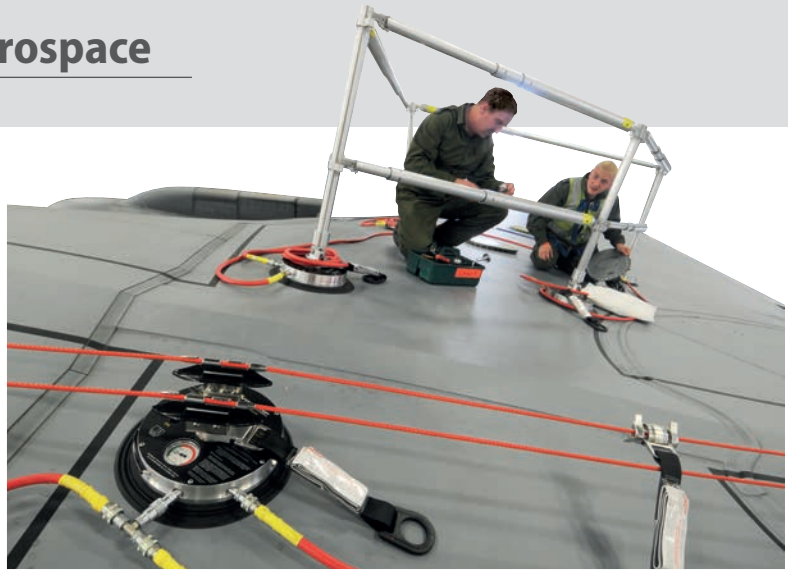


WinGrip Barrier System

The WinGrip Barrier System provides solutions for working at heights on aircraft during manufacture and maintenance.

System can be installed by one person and when set up, provides enclosed environment for unlimited workers for any time duration. WinGrip Barrier System reduces fall risk by providing superior safety at heights; workers require only basic training to work within the system without need of harnesses and lanyards. System consists of upright stanchions connected at the base to a WinGrip System vacuum pad. Stanchion interface is fully adjustable and ensures that correct installation can be achieved on any undulating surface.

Horizontal rails are adjustable in length and angle that allows any system shape to be installed and adjusted at any time. Systems can be supplied to enclose any size area from 10 sq. ft. (1 m²) to an aircraft's entire upper surface.



WinGrip Barrier System

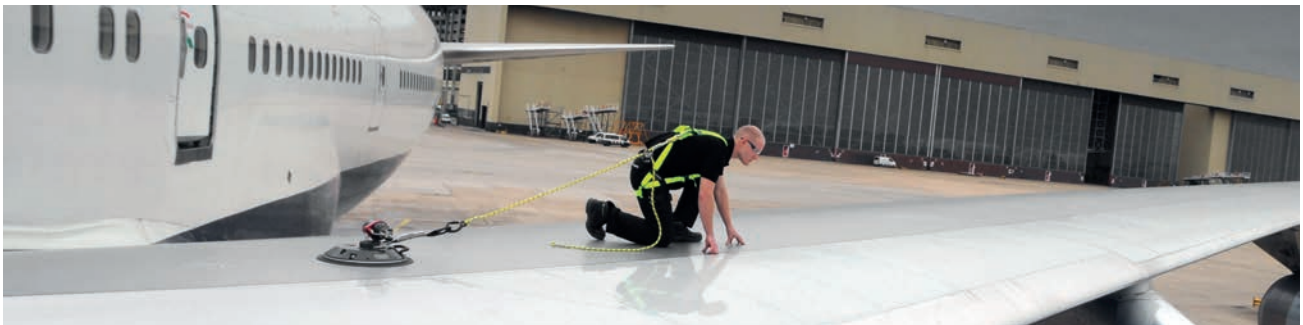
WinGrip All-In-One (AIO) System

The Latchways WinGrip AIO System vacuum anchor is designed for flightline or quick hanger tasks. WinGrip AIO System certified fall arrest system is meant for personnel working on aircraft during manufacture or routine maintenance operations, providing both fall arrest and fall restraint. WinGrip AIO System for fall protection is lightweight, compact, intrinsically safe, and can be used inside and outside of aircraft hangars and maintenance facilities. System is powered by either compressed air or nitrogen, offering working temperature range from arctic freezing to extreme desert.

System is quick to deploy and easy to use on walking wing areas or structural fuselage sections. WinGrip AIO System fall arrest-rated vacuum anchor employs a removable, rechargeable gas bottle. AIO System anchor can also be supplied using shop air found in any hanger. When the pad has been vacuum-locked in place, worker can attach to the system wearing a full body harness and work positioning ropes to enable hands-free access for all necessary maintenance.

System Benefits

- Ergonomically designed
- Lightweight carbon fiber
- Can be used independently; no need for additional modules or pads
- Uses no electricity; suitable for use within both wet and dry conditions
- Powered by nitrogen or compressed air
- Refillable gas bottle allows unlimited usage time
- Compliant with all relevant worldwide standards such as ANSI and CE certification



WinGrip AIO System

Why choose the WinGrip System?

Commercial

WinGrip Systems for fall protection are used by airlines, major manufacturers and MROs globally for fixed-wing commercial aircraft maintenance, as this system's flexibility and reliability minimizes downtime and cost of ownership.

Military

MSA has resources, expertise and experience to meet procurement procedures and long-term service commitments demanded by military organizations. In addition, the WinGrip System is suited to most fixed-wing aircraft, with mobility, speed of installation and suitability for outside military use. The WinGrip System is widely used by military organizations in the USA, Australia, UK, and other European countries, with US national stock codes, NATO stock numbers and additional recognitions.

Manufacturers

Boeing

The WinGrip System is used for select Boeing aircraft including the 787 Dreamliner as well as for AOG teams. The WinGrip System is approved for use on the entire Boeing aircraft fleet.

Airbus

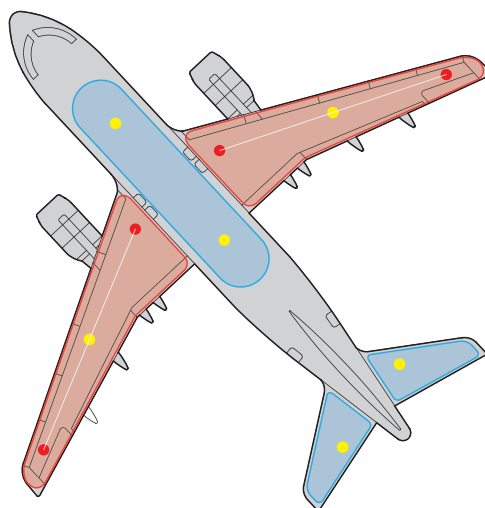
WinGrip System is used extensively in Airbus aircraft manufacturing applications, listed as a specified tool in the Airbus Aircraft Maintenance Manual. Through Latchways products, MSA has worked closely with Airbus to develop the WinGrip multiple-user cable-based System; the WinGrip System is listed in the Airbus AMM for all aircraft types as the only fall protection system to be used on their aircraft.







Value-added Services



MSA builds close working relationships with customers, providing a complete package of services over the long term—not just supplying products. Full design service can be provided for specific aircraft with the most efficient usage of WinGrip Systems. Training for workers and managers in all aspects of WinGrip System installation and operation can be provided, together with system maintenance.



Example of WinGrip Systems Layout & Coverage

-  Denotes coverage when using single pad system. Single pad system can be placed along entire length of fuselage or on rear stabilizers.
-  Denotes coverage provided by twin line system.
-  Intermediate pad
-  End anchor pad

Solutions for Every Situation

Overhead Systems

In addition to WinGrip System products, MSA offers complete working at heights solutions for the aerospace industry. MSA Latchways Overhead Systems provide permanent cable-based fall arrest within hangars where aircraft positioning is consistent or access is continuously required within the same area. Overhead Systems combine innovative Constant Force® Technology with unique mobile anchorage as a robust solution for outstanding levels of safety, convenience and versatility. Workers attached to an overhead system are provided with unfettered mobility and continuous, hands-free security while working at heights.

Self-Retracting Lifelines (SRLs)

To complement the Latchways range of overhead systems, MSA combines expert engineering, superior materials and futuristic design with quick and easy maintenance to provide the most advanced self-retracting lifelines available. SRLs offer unique features to provide smarter, safer and stronger alternatives to traditional units.

- Patented frictionless braking system
- 100% reliable locking mechanism not driven by tensioned springs
- Modular construction wrapped in strengthened case
- Reduced maintenance time and costs

V-TEC Mini
Personal Fall Limiter



V-TEC Self-
Retracting Lanyard



Latchways Standard
Self-Retracting Lifeline



MSA—The Safety Company

Our business is safety. We've been the world's leading manufacturer of high-quality safety products since 1914. MSA products may be simple to use and maintain, but they're also highly-sophisticated devices and protective gear — the result of countless R&D hours, relentless testing and an unwavering commitment to quality that saves lives and protects thousands of men and women each and every day. Many of our most popular products integrate multiple combinations of electronics, mechanical systems and advanced materials to help ensure that users around the world remain protected in even the most hazardous of situations.

Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

MSA: Because every life has a purpose.

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



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