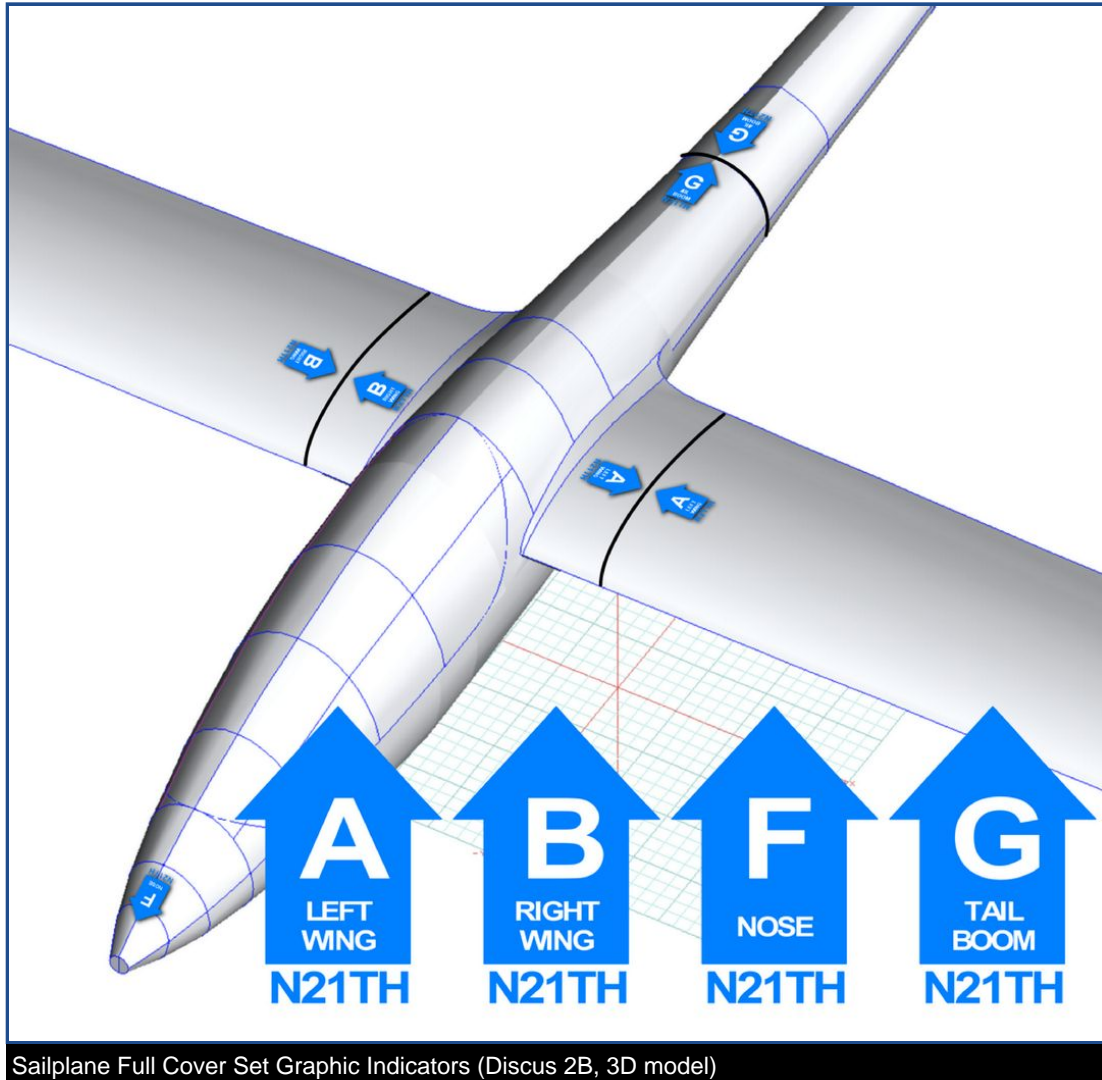


Tech Sheet: Grob 103 Twin Astir, Twin II, Twin III

(grob-G103.pdf)



Sailplane Full Cover Set Graphic Indicators (Discus 2B, 3D model)

Section 1: Glider Canopy/Cockpit/Fuselage Covers

Turtledeck Extension adds more cover material to the aft edge of the Canopy/Nose Cover, providing custom coverage for antennas, solar panels or motorglider bay doors.

This cover type is made from Silver Acrylic Sunbrella canvas and is 100% lined with a soft and smooth microfiber. Bruce's Custom Covers developed this material combination especially for aircraft protection. The outer material is medium weight and treated for water resistance, UV resistance and anti-static buildup. The inner lining is a very soft and smooth microfiber to prevent scratching. The material is very reflective, and tests show that the cabin interior temperature can be reduced to near-ambient temperature on the hottest of days. It is water, ice and snow repellent, yet breathable to allow moisture to escape from between the cover and the aircraft surface.

The **Canopy/Nose Cover** encloses the entire canopy and nose areas. Attachment buckles are made of nonmetal *Delrin*, designed for rugged outdoor use. Pockets are sewn into the cover for any probe and antennas. The cover is reinforced with patches at hinge

points, door handles, and other protrusions.

This cover type is made from Silver Acrylic Sunbrella canvas and is 100% lined with a soft and smooth microfiber. Bruce's Custom Covers developed this material combination especially for aircraft protection. The outer material is medium weight and treated for water resistance, UV resistance and anti-static buildup. The inner lining is a very soft and smooth microfiber to prevent scratching. The material is very reflective, and tests show that the cabin interior temperature can be reduced to near-ambient temperature on the hottest of days. It is water, ice and snow repellent, yet breathable to allow moisture to escape from between the cover and the aircraft surface.



ASW-20C Canopy/Nose Cover



Grob 103 Canopy/Nose Cover and Wing Covers

Description	Part Number	Price
CANOPY/NOSE COVER, all year use	G103-000	\$480.00
CANOPY/NOSE COVER (overlaps with empennage cover), all year use	G103-010	\$545.00
TURTLEDECK EXT, antennas, solar panels, motor bay	G103-095	\$95.00

Section 4: Glider Wing/Tail/Empennage Covers

All Weather Wing Covers are a perfect solution to protect your paint from sun damage and prevent winter frost, snow, ice buildup, and corrosion. They are made from Solution-Dyed Polyester or Acrylic *Sunbrella* and form-fit to slip around each wing tip, cover the entire upper surface of the wing and wrap around the leading and trailing edges. The covers secure under the wing with adjustable straps from the trailing edge to the leading edge. The wing covers can also attach to each other with adjustable straps at the leading and trailing edges of the wing under the belly of the plane. Wing covers are labeled LEFT and RIGHT for installation convenience. Wing Covers are available for travel use or long-term, all year use.

ALL-YEAR USE MATERIAL - Made with Silver Acrylic Sunbrella canvas, the all-year use material is the best option for sun protection and cover longevity. This heavier more durable material is intended for all weather conditions, such as rain and snow or lots of sun.

WINTER USE MATERIAL - Made with Solution-Dyed Polyester fabric, this option is intended for seasonal use to aid in deicing, rain mitigation, or for occasional travel. The material is lighter and more compact, but more susceptible to UV damage and may have a shorter useful life if used continuously outside than the all-year use material.

All Weather Horizontal Stabilizer Covers are a perfect solution to protect your paint from sun damage and prevent frost, snow, ice buildup, and corrosion. They are made from Solution-Dyed Polyester or Acrylic *Sunbrella*. They cover the entire upper surface of the stabilizers and overlap around the leading and trailing edges as well as the wing tip. The covers secure under each stabilizer with adjustable straps. In some instances, cut-outs are made in the trailing edge of the wing covers to accommodate static wicks. Horizontal Stabilizer Covers are available for winter use or long-term all year use, and are normally made from Solution-Dyed Polyester or Acrylic *Sunbrella*. A Hail Protection version can be made which incorporates dense closed cell foam into the entire upper surface of the wing covers to help prevent hail damage. Although these covers are bulky, they do help protect your wing and control surfaces against small to medium-size hail.

ALL-YEAR USE MATERIAL - Made with Silver Acrylic Sunbrella canvas, the all-year use material is the best option for sun protection and cover longevity. This heavier more durable material is intended for all weather conditions, such as rain and snow or lots of sun.

WINTER USE MATERIAL - Made with Solution-Dyed Polyester fabric, this option is intended for seasonal use to aid in deicing, rain mitigation, or for occasional travel. The material is lighter and more compact, but more susceptible to UV damage and may have a shorter useful life if used continuously outside than the all-year use material.

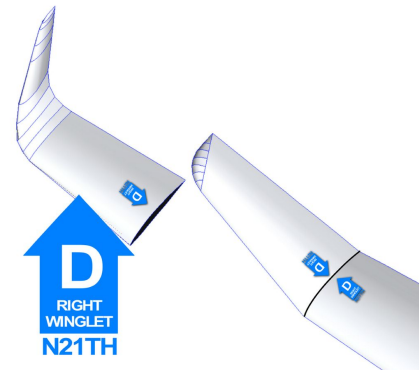
The **Grob 103 Twin Astir, Twin II, Twin III Empennage Cover** is a complete, one-piece cover which covers both the vertical and horizontal stabilizers, as well as the tailboom. It is normally made from *Solution-Dyed Polyester* or *Acrylic Sunbrella*. The cover attaches with adjustable straps underneath the belly. The cover is pulled back over the vertical stabilizer and a plastic all-weather zipper is closed at the trailing edge of the rudder. The cover is then stretched over the elevators and zippered closed along the bottom outboard elevator surfaces. The covers cinch under the horizontal stabilizers using adjustable straps. All antennas, beacons and static wicks, if applicable, are accounted for in the design.

ALL-YEAR USE MATERIAL - Made with Silver Acrylic Sunbrella canvas, the all-year use material is the best option for sun protection and cover longevity. This heavier more durable material is intended for all weather conditions, such as rain and snow or lots of sun.

WINTER USE MATERIAL - Made with Solution-Dyed Polyester fabric, this option is intended for seasonal use to aid in deicing, rain mitigation, or for occasional travel. The material is lighter and more compact, but more susceptible to UV damage and may have a shorter useful life if used continuously outside than the all-year use material.



Grob 103 Canopy/Nose Cover and Wing Covers



Sailplane Full Cover Set Graphic Indicators (Discus 2B, 3D model)

Description	Part Number	Price
WING COVERS, 17.5 meter wingspan, all year use (set of 2)	G103-200	\$985.00
WING COVERS (Twin III model), 18 meter wingspan, all year use (set of 2)	G103-210	\$985.00
HORIZONTAL STABILIZER COVER, all year use	G103-300	\$340.00
EMPENNAGE COVER, Twin II, incl. horiz. stab., all year use (set of 2)	G103-350	\$735.00

Section 10: Inside the Hangar

Designed to prevent damage to the wingtip in crowded hangars or high traffic areas, these products are made of bright red Naugahyde and thickly padded with a sandwich of closed cell foam. Protects delicate winglets, casters and their housings, and soft finishes.



Schempp-Hirth Ventus-2B winglet/wingtip pads



Stemme S-10 & S-12 Wingtip Pads

Description	Part Number	Price
WINGTIP PADS (set of 2)	G103-280	\$255.00

Prices subject to change. Other Covers and Design Alterations: Prices on request.
Prices are FOB Morgan Hill, CA. Sales tax on orders shipped to California addresses. Orders take approximately 3 weeks to complete. For domestic orders we normally ship by UPS ground service. Next day shipping and air parcel post is available on request. We can take payment by Visa, Mastercard, American Express, or Discover.

Bruce's Custom Covers offers protective covers and plugs for virtually every type of airplane, jet and helicopter. If you have questions about our products please call any time TOLL FREE: 800/777-6405, or FAX: 408/738-2729.

Aircraft Cover Ordering Form

Customer Info	Name _____
	Shipping Address _____ _____
	Phone & Email _____
Payment	Credit Card Number <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Exp. Date <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> V-Code* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>*Visa, Mastercard, Discover: last 3 numbers on back of card, right of signature. Amex: 4 smaller numbers printed on face of card.</small>
A/C Info	Reg / Tail Number: _____ Aircraft Type: _____ Year: _____
	Colors / Paint Scheme (be specific): _____

Please specify below the items you would like to order.

See technical sheet or visit our website for part numbers (or just fill in the description)

1	Part Number	Quant	Description	Price
2				
3				
4				
5				
6				
7				
8				
9				
10				

TOTAL

Optional Items (check the box of the item you want)

Imprint aircraft registration number onto both sides of canopy cover.....\$35.00

Imprint aircraft registration number onto jet intake covers.....\$55.00