



# VW MK5 Golf/GTI/R32 Modular Wing Kit

Installation Instructions

Rev: 05.18.23



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# Parts list

## items in this kit include:

- (1) Extruded T6061 aluminum 55", 8.8 chord deep camber airfoil
- (2) 5052 laser-cut aluminum endplates
- (2) 5052 l/c aluminum canards
- (2) 5052 l/c aluminum hatch mounting plates
- (2) Neoprene sponge rubber mounting plate dampers (pre-assembled)
- (10) x M6 x 12 flanged button head stainless (canard to endplates & endplate to lower mount)
- (8) x M6 x 20 flanged button head stainless (Mounts into rivnuts in body)
- (4) x M8 x 20 flanged button head stainless (foil)
- (6) x M8 poly washers (between end plate & foil)
- (18) x M6 poly washers (all other hardware)
- (10) x M6 Stainless rivnut (for hatch install - 2 extra)
- (10) x M6 Stainless rivnut (Preassembled in canards & lower mount)
- 9mm drill bit (available for purchase)

**Note:** Some hardware, canard design and lower mounts have changed in production kit



# Tools required

## to assemble & install your new wing

- 5mm hex bit or Allen key (for M8s)
- 4mm hex bit or Allen key (for M6s)
- 2.5mm hex bit or Allen key (for M3s)
- Cordless driver/drill
- Hand driver/hex bit handle
- 1/4" (pilot holes) and 9 mm (threaded anchors) drill bits
- Center punch
- Hammer
- Windex and lint-free towel or tack rag
- Carpenter's pencil or Sharpie
- Pocket knife
- Handheld vacuum
- High speed rotary tool and cutting wheels
- Nut-cert/riv-nut tool

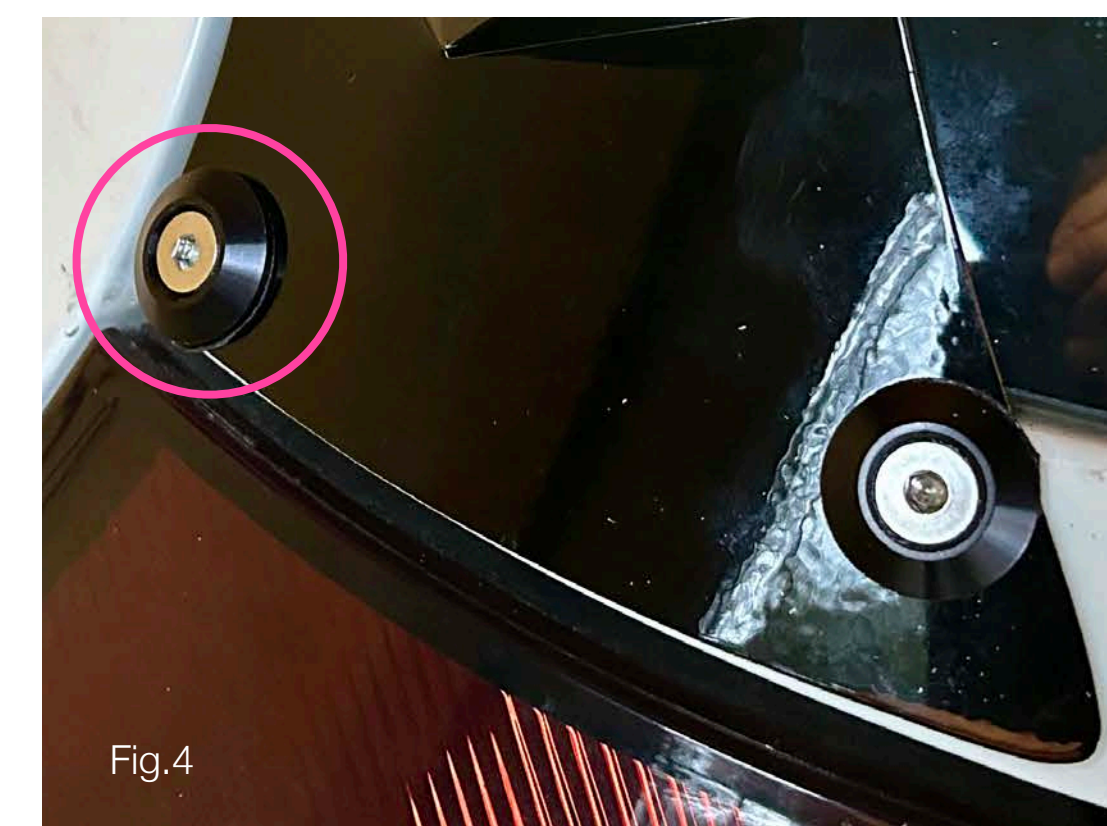
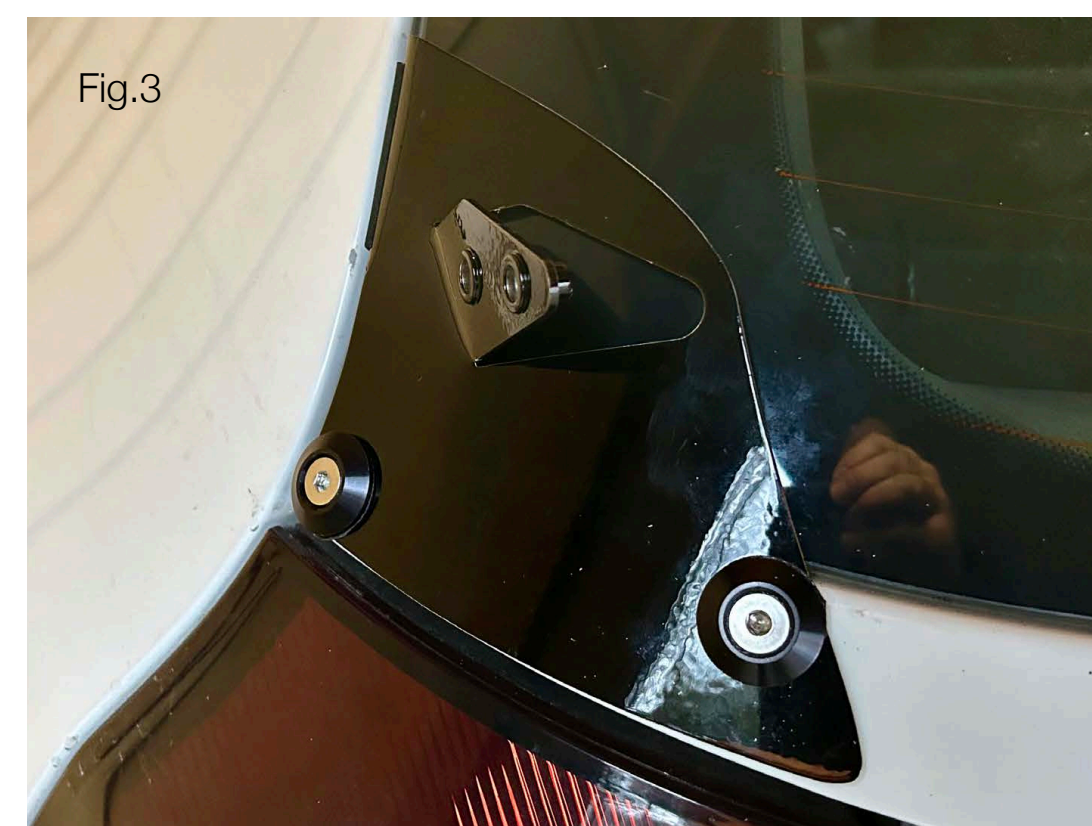
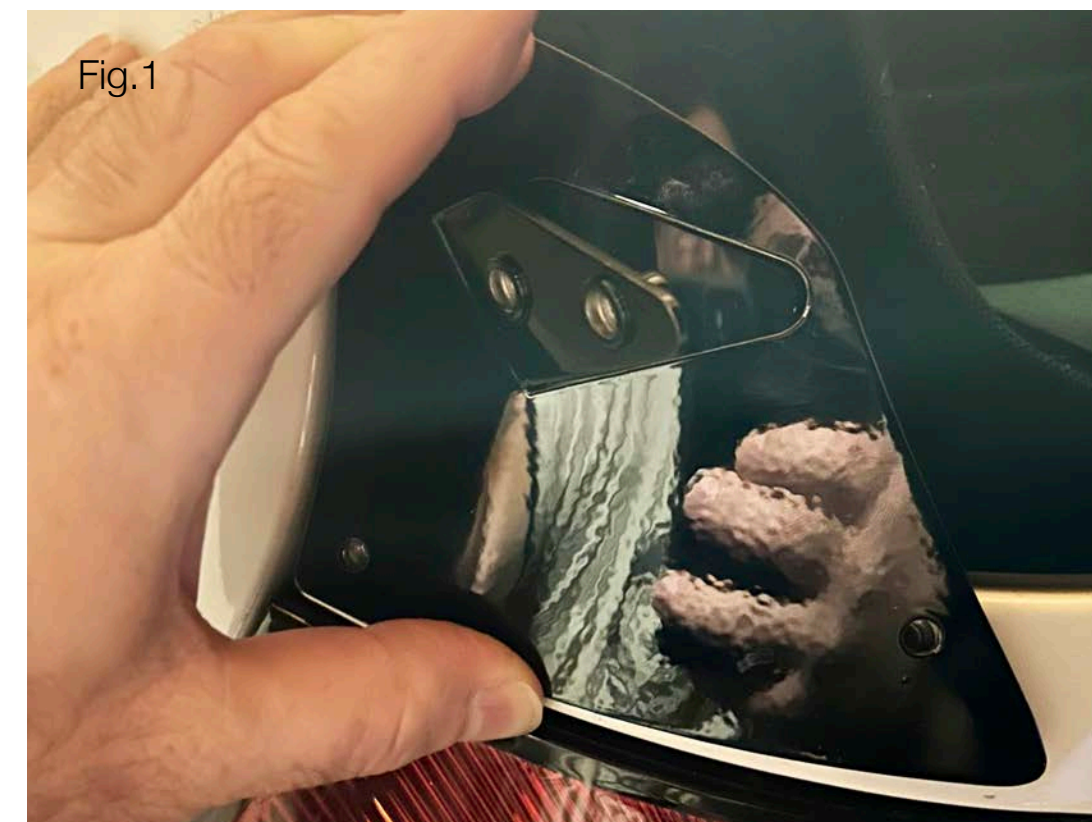
### Recommended:

- Soft jaw woodworking bar clamps (2)
- Extra set of hands (for wing mounting)
- Clear nail polish for coating raw edges of holes
- Patience!



# Installation steps

1. Use Windex/tack rag & supplied alcohol pads to wipe lower corners of hatch glass, preparing surfaces to receive lower wing mounts. Surface must be completely free of any dirt, wax or residue prior to foam padding application.
2. Test fit hatch mounting plates at bottom corners of hatch prior to drilling holes for installation. Contour of plate should be loosely aligned to hatch edge at bottom, with support tab hooking around edge and tight against hatch. When positioned properly, neoprene material will also be slightly compressed against glass edge. (Fig.1) Then with plates held in place as noted above, mark locations for M6 nut-certs with carpenter's pencil or Sharpie.
3. Use center punch to register locations for drilling hatch as marked in step 3. Drill (4) 1/4" pilot holes, then (4) 3/8" holes thru metal of hatch to accept M6 nut-certs. Clean up holes by hand or with chamfer bit and vacuum up shavings.
4. 4 stainless steel M6 nut-certs are provided for securing mounts to hatch. A special tool is required for inserting these into the factory sheet metal. (Fig.2) Once threaded nut-certs have been installed into hatch, hold mounts flush against corners and test fit them using (4) M6-20mm countersunk screws/M6-poly washers (Fig.3)
5. Remove (2) M6-20mm countersunk screws from front corner of hatch mounting plates. Position endplates on outside of mounting tabs, resting inner neoprene pads on hatch plates. Secure to tabs from the outside with (4) M6-12mm buttonhead stainless steel mounting screws & (4) M6-poly washers. Do not tighten fully, as slight angle adjustments may ultimately be necessary to properly position canards on factory spoiler, and/or align holes with endplates in next step (Fig.4)



**Note:** Some hardware, canard design and lower mounts have changed in production kit

# Installation steps

6. Marry endplate to hatch mounting plate by re-inserting (2) M6-20mm buttonhead screws thru endplate and mount into nut-cert at front corner of hatch. Tighten down all 4 screws securely, alternating between front and back mounting points until mount is drawn flush with hatch edge. (Fig.5)
7. Join main airfoil to endplates using the (4) M8 flanged buttonhead stainless steel wing bolts & 6-M8 poly washers as shown. Use poly washers on inside and outside of front pivot bolt and outside only on rear adjustment bolt. Snug down so poly washers contact endplates, but do not tighten fully until installation is finished in step 10. (Fig.6)
8. Set wing at 0° angle (bottom hole in rear) for general street use, reserving higher 5° or 10° wing angles for spirited road or track driving where higher downforce is required.\* Do not tighten fully until entire wing assembly is finished in step 10. (Fig.6)
9. Mount canards to wing endplates with (6) M6-12mm buttonhead stainless steel mounting screws, and (6) M6-poly washers (Fig.7)
10. Check that front of canards is aligned 1/8" inside front edge of hatch & that rear edges are positioned slightly in front of contour line of factory spoiler. On models without factory spoiler cap, align front edge 1/8" inside hatch edge. Check that full assembly is centered on hatch and then hold or clamp Canards against spoiler, marking hole locations with carpenter's pencil or Sharpie (Figs. 8a/b, 9)

\*Wing angle can be set in 5° increments from 0°-10°.

Please refer to wing telemetry chart in appendix for data on downforce levels)

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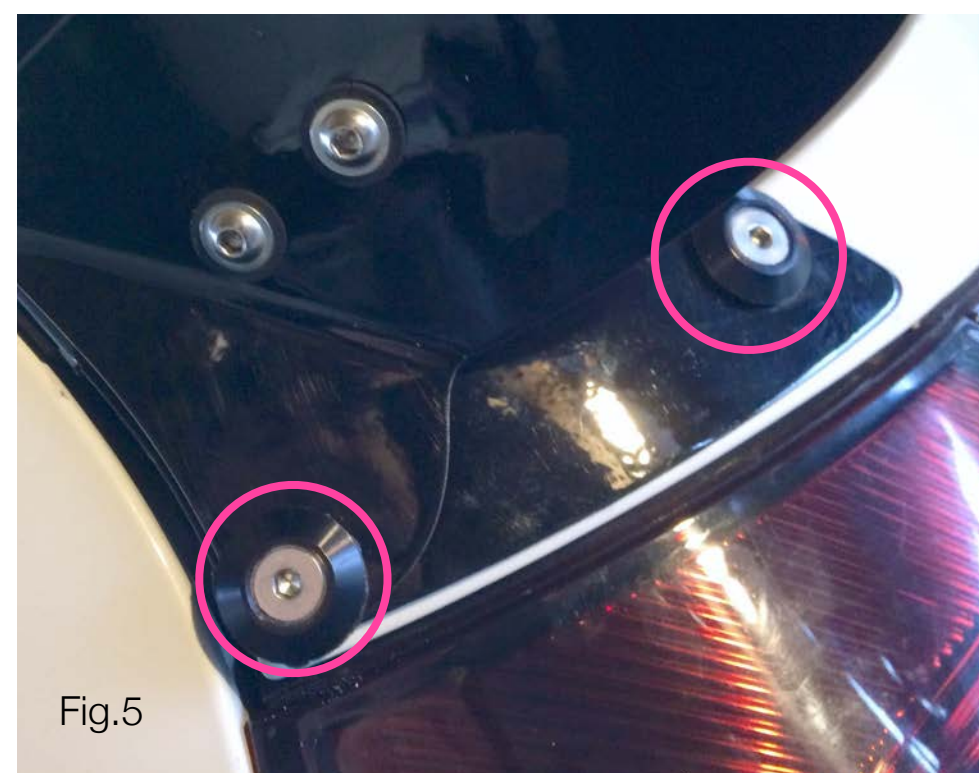


Fig.5



Fig.6



Fig.7



Fig.8a



Fig.9



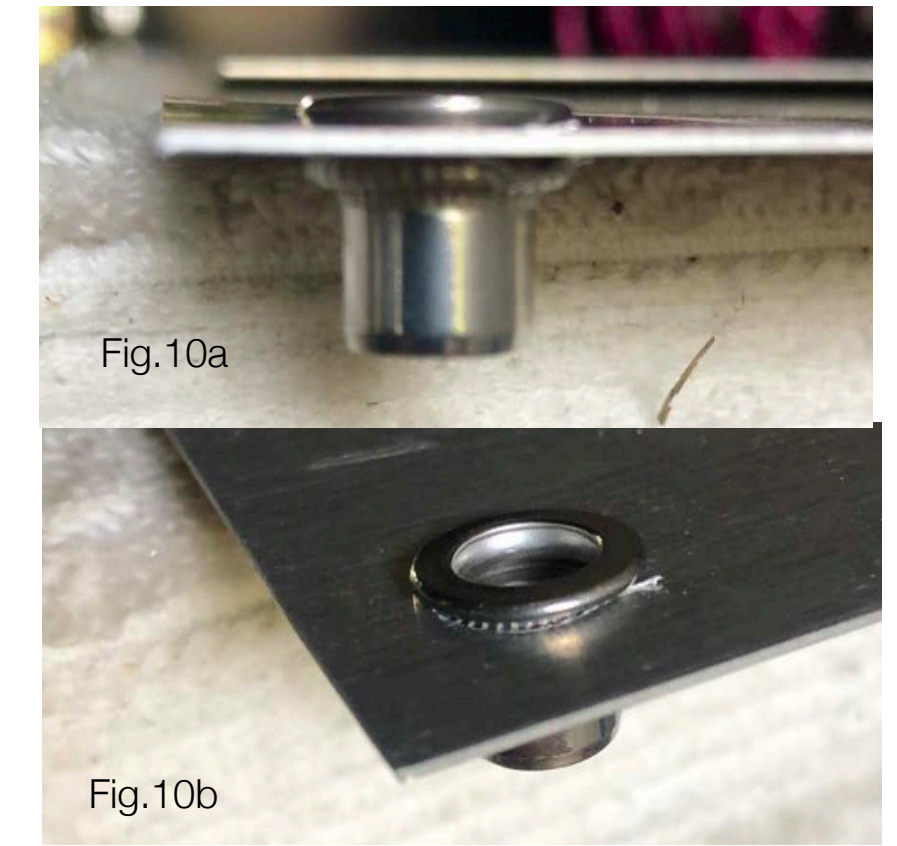
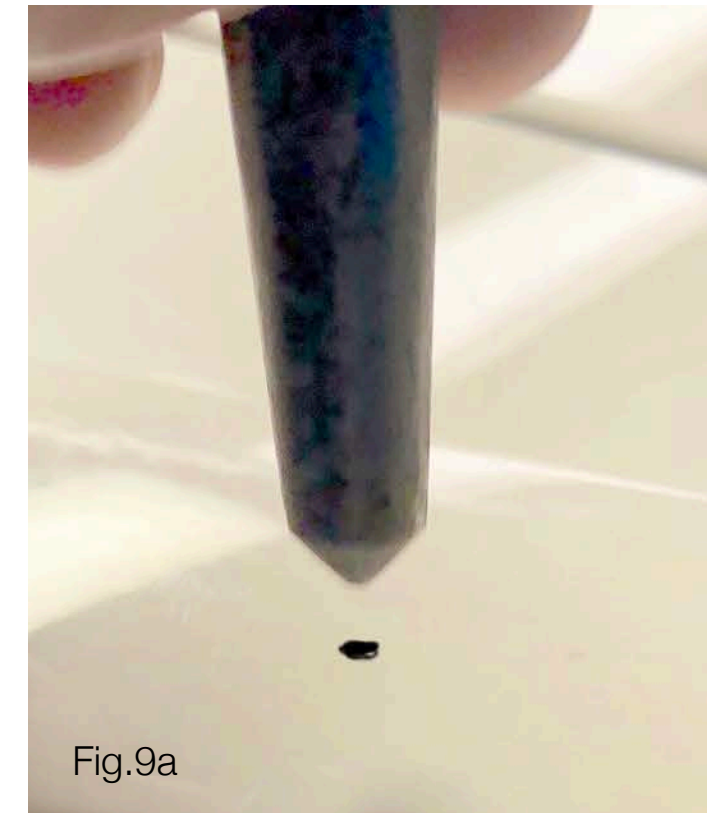
Fig.8b



# Installation steps

11. Temporarily remove Canard assemblies from wing endplates by removing (6) M6-12mm screws used to hold them in place. Use center punch to register locations for drilling spoiler as marked in step 8. Drill (4) 1/4" pilot holes, then (4) 9 mm holes thru metal of hatch to accept M6 nut-certs. Clean up holes by hand or with chamfer bit and vacuum up shavings. (Fig.9a/9b)
12. (Fig.10a/b) 4 additional stainless steel M6 nut-certs are provided for mounting canards to hatch. (Fig.11) Once threaded nut-certs have been installed into hatch top, hold canards flush against spoiler & use (4) M6-20mm countersunk hex drive shoulder screws & (4) M6-poly washers to secure canards to hatch top. (Fig.12) Use (6) M6-12mm screws and (6) M6-poly washers to re-attach canards to endplates.
13. **Remove fasteners one by one and apply blue Loctite to all M6 screw threads on canards and lower mounts once final adjustments to fitment have been made.**
14. Fully tighten all (18) M6 mounting screws (of various sizes/types) across wing assembly, canards and lower mounts until washers are compressed. Tighten (4) M8 wing mounting screws fully. Check all joints/screws prior to initial road test & periodically thereafter to ensure secure mounting. (Fig.13)

**Note:** Some hardware, canard design and lower mounts have changed in production kit



# Appendix





# Performance data & specs\*

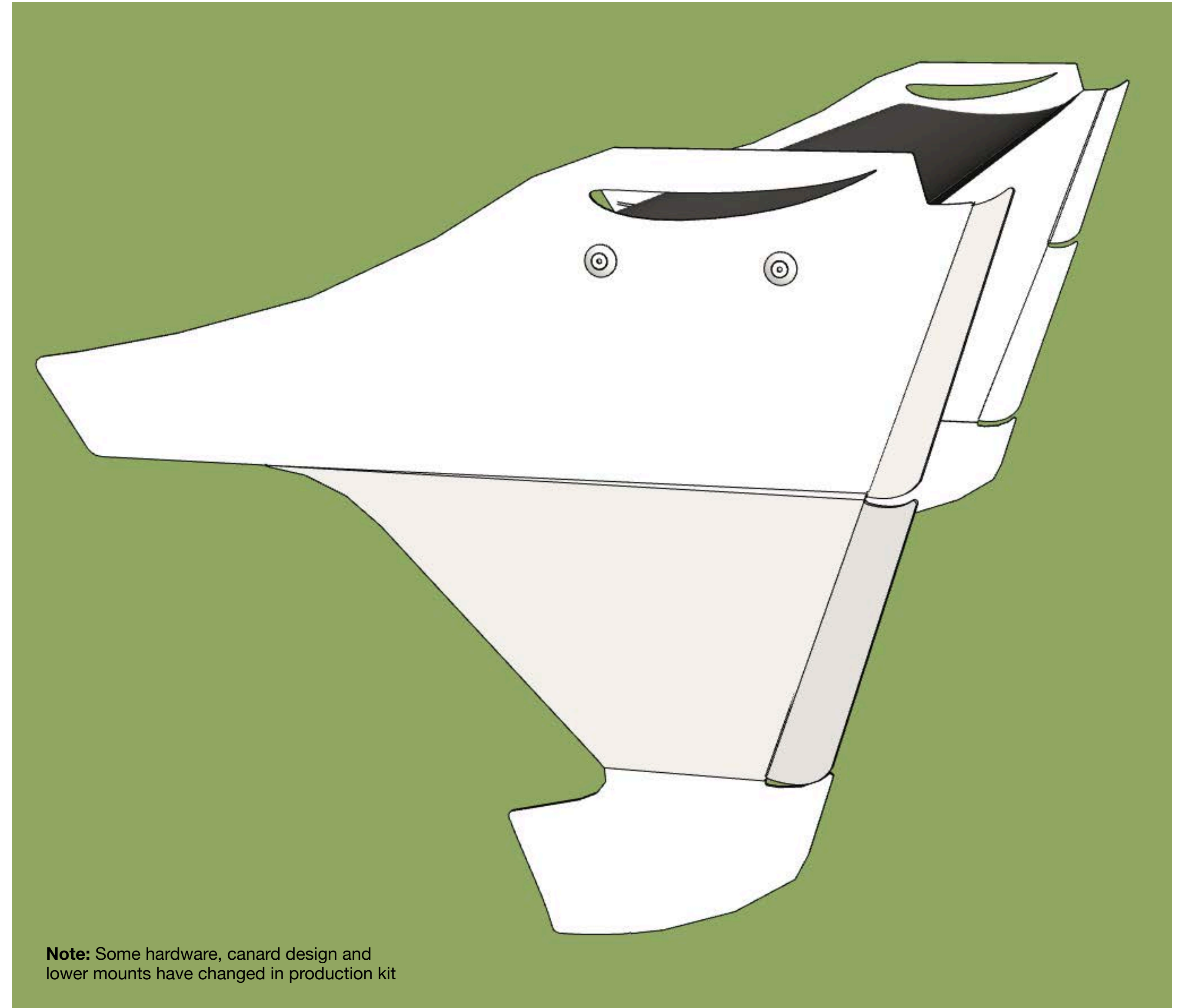
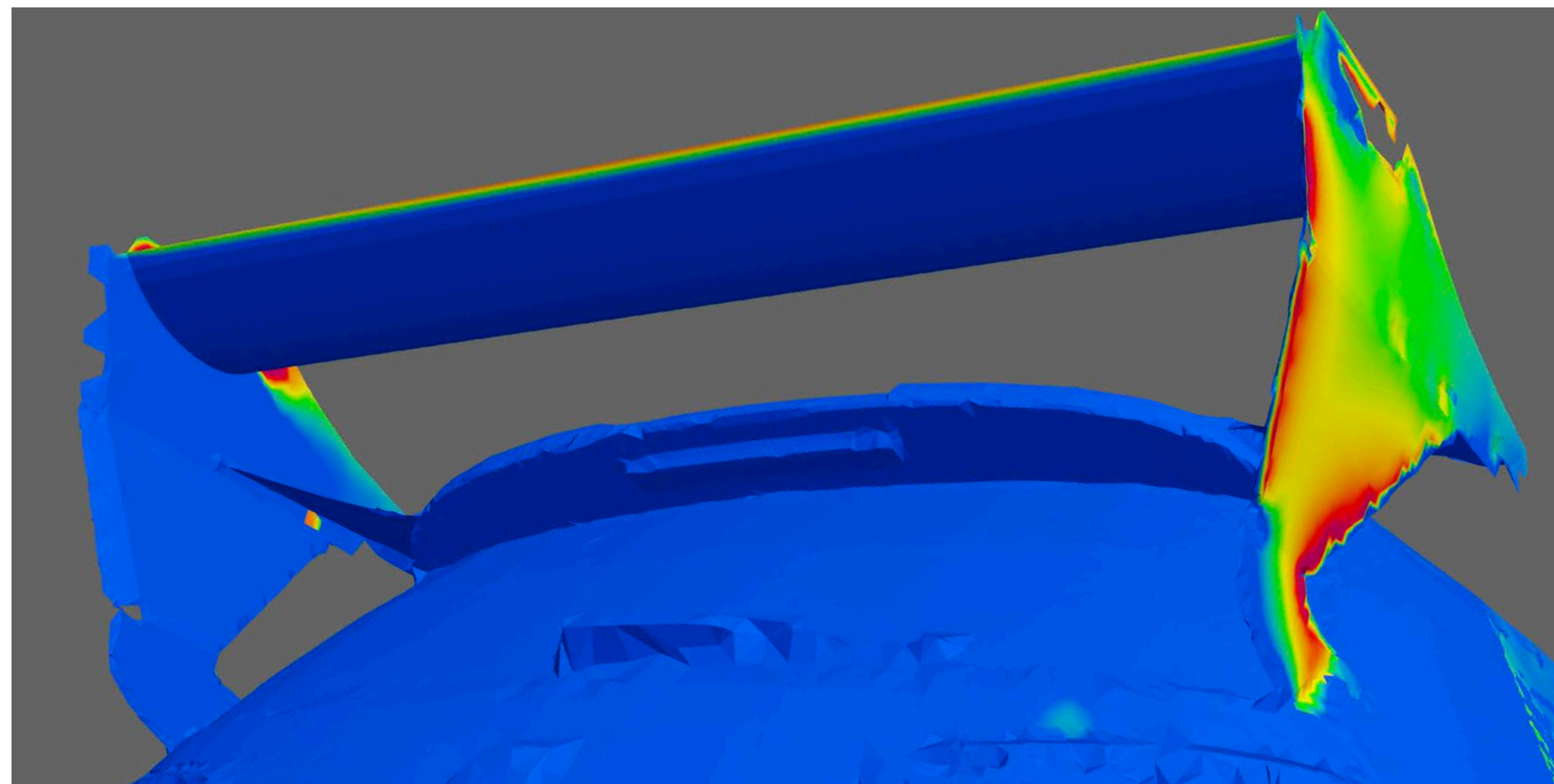
YRC MK5 Track Wing Downforce calculated using: $1/2\rho \times A \times C_l \times V^2$ method							
Variable	60 mph/0° AOA	80 mph/0° AOA	100 mph/0° AOA	120 mph/0° AOA	140 mph/0° AOA	160 mph/0° AOA	55"/8.8" chord wing
1/2 $\rho$ (air density)	0.00119	0.00119	0.00119	0.00119	0.00119	0.00119	At sea level
Wing Area (A)	3.36	3.36	3.36	3.36	3.36	3.36	In Square Feet
Lift Coeff (Cl)	2.195	2.195	2.195	2.195	2.195	2.195	CFD-derived
Velocity squared (in FPS)	7744.03520004	13767.17368896	21511.208889	30976.14080016	42161.96942244	55068.69475584	fps squared
<b>Wing Downforce (lbs.)</b>	<b>67.9654320047287</b>	<b>120.827434675073</b>	<b>188.792866679802</b>	<b>271.861728018915</b>	<b>370.034018692412</b>	<b>483.309738700293</b>	<b>lbs.</b>
Canard DF	8.84	17.52	24.55	32.05	48.11	62.84	lbs.
<b>Full assembly DF</b>	<b>76.8054320047287</b>	<b>138.347434675073</b>	<b>213.342866679802</b>	<b>303.911728018915</b>	<b>418.144018692412</b>	<b>546.149738700293</b>	<b>lbs.</b>
Velocity mph	60	80	100	120	140	160	mph
mph/fps conversion	1.46667	1.46667	1.46667	1.46667	1.46667	1.46667	conversion factor
Velocity fps	88.0002	117.3336	146.667	176.0004	205.3338	234.6672	fps
Velocity fps	88.0002	117.3336	146.667	176.0004	205.3338	234.6672	fps
Rear lift (due to form drag)	-11.1	-14.2	-18.5	-20.6	-25.9	-29.6	lbs.
<b>Net Rear DF w/o GF</b>	<b>65.7054320047287</b>	<b>124.147434675073</b>	<b>194.842866679802</b>	<b>283.311728018915</b>	<b>392.244018692412</b>	<b>516.549738700293</b>	<b>lbs.</b>

\*Actual performance may vary given altitude, wind speed/direction and other environmental factors.



# Wing Kit Specifications

Full wing assembly weight.....	18 lbs.
Main airfoil width.....	55"
Main airfoil area .....	3.36 ft <sup>2</sup>
Canard area (combined) .....	2.30 ft <sup>2</sup>
Total wing wing area .....	5.66 ft <sup>2</sup>
Main airfoil material .....	T6061 aluminum extrusion, 2mm wall
Main airfoil mounting: .....	4 M8 threaded sections
Endplate/canard material .....	5052 cold-rolled aluminum plate
Hardware material .....	A2-70 austenitic, acid-proof 304 stainless
Threaded inserts.....	M6 Stainless Steel
Brand graphics .....	.05 mil opaque sign vinyl
Damper material.....	1/8" adhesive-backed neoprene rubber



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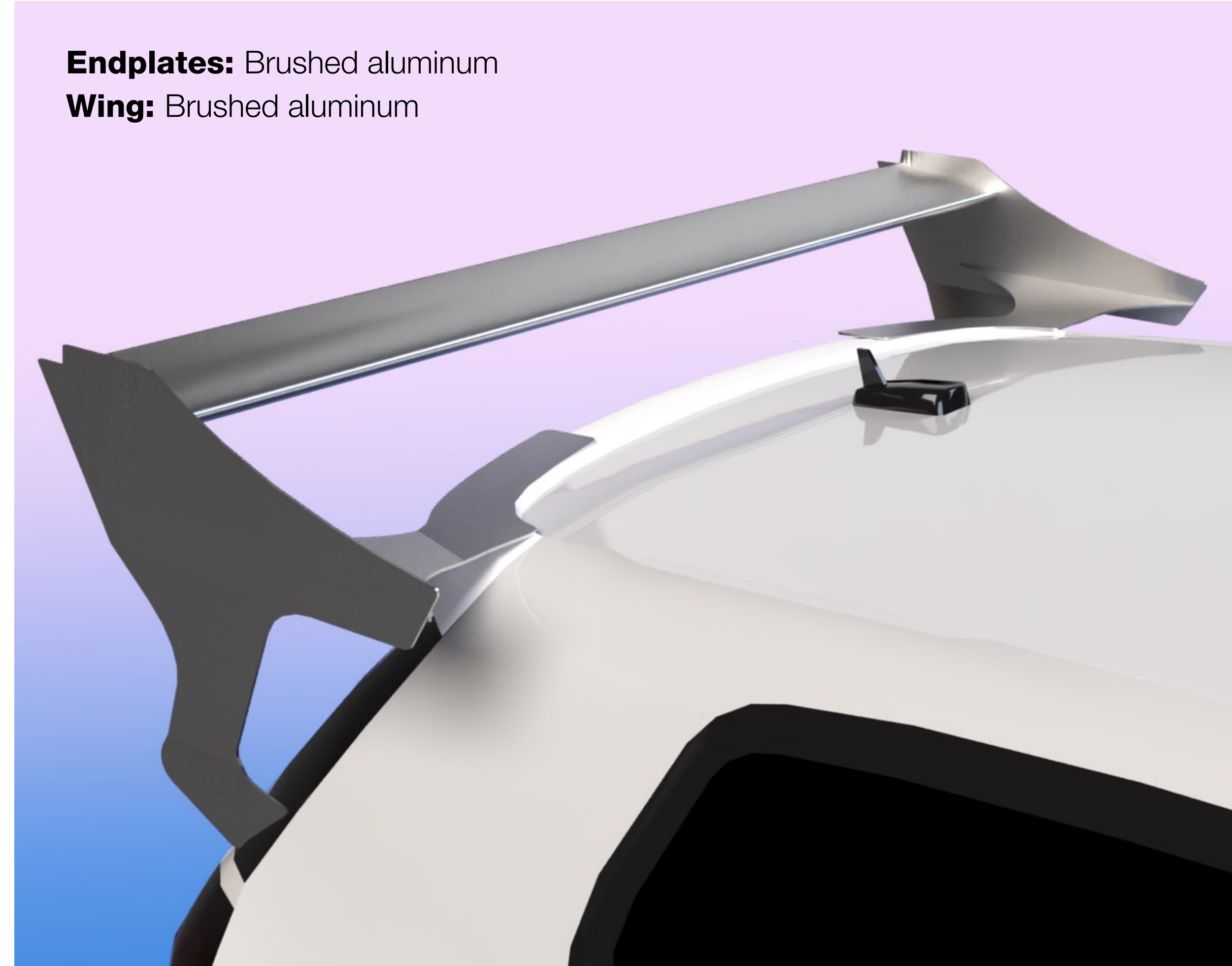
# Standard wing finishes

V1.0 wing design shown. Available finishes unchanged

**Endplates:** Black powdercoat  
**Wing:** Black powdercoat



**Endplates:** Brushed aluminum  
**Wing:** Brushed aluminum



# Disclaimer

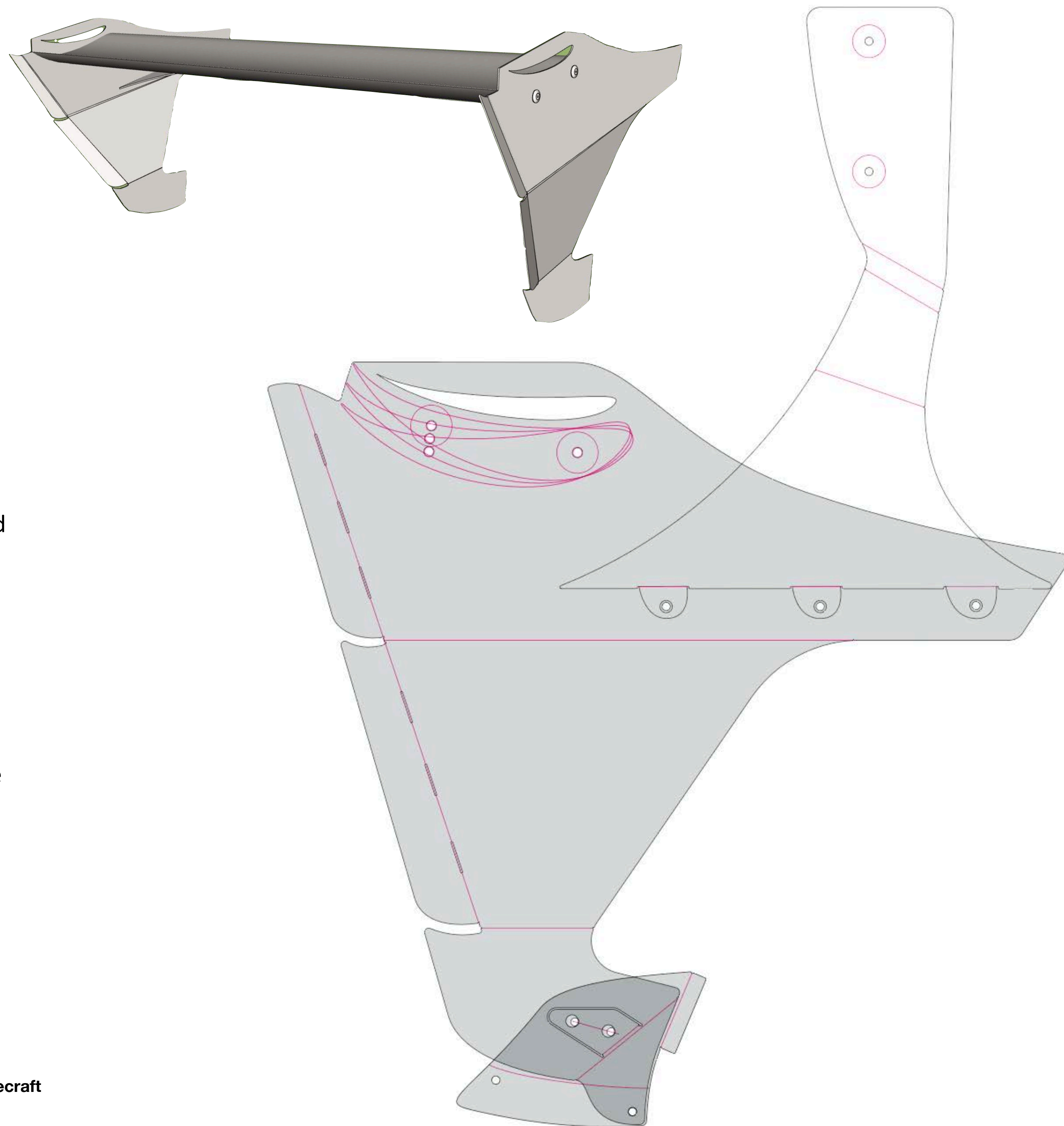
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