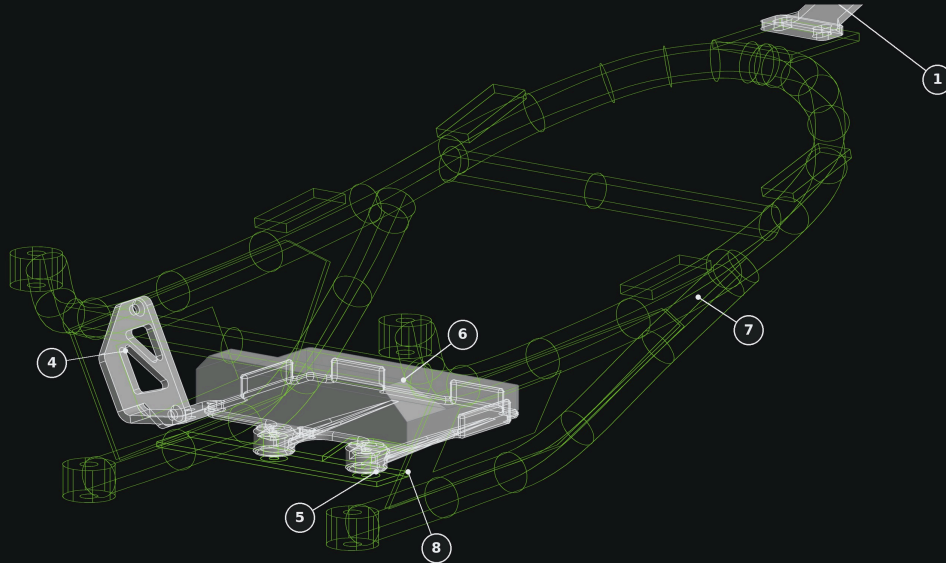




— CASE STUDY

Yamaha R1 tail section: a bracket set for a club race bike



— THE CHALLENGE

A race subframe saves weight and is cheap to fix after a crash. It also shows up bare. On my ASRA R1 the Moto Holders frame left the Carbonin tail, the seat bracket, the rectifier and the ECU without a home, and everything had to come apart quickly between sessions.

— WHAT I DID

I modeled the frame area and the bodywork interfaces in Inventor, then designed three parts around them. The tail extension and rectifier bracket are aluminum sheet with flat patterns and drawings. The ECU tray is printed and uses the frame's welded bosses for location. Tight spots got a printed fit check before any metal was cut.

— RESULT

Every part bolts on with no welding to the frame. The tail and seat bracket mount through rivet nuts, the rectifier sits outside the side plate, and the ECU drops into its tray with two screws.

BIKE

Yamaha R1, ASRA club race bike

FRAME

Moto Holders aluminum race subframe

BODYWORK

Carbonin race tail

PARTS

Tail extension, rectifier bracket, ECU tray

TOOLS

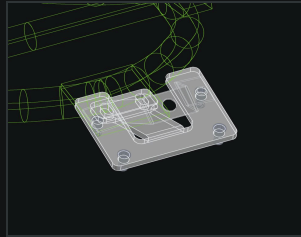
Autodesk Inventor, sheet metal, 3D printing

DELIVERABLES

IPT, IDW, DXF, STEP, print files

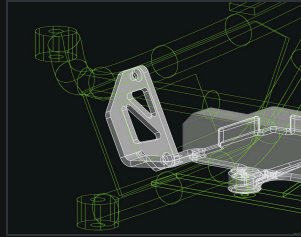


THE PARTS



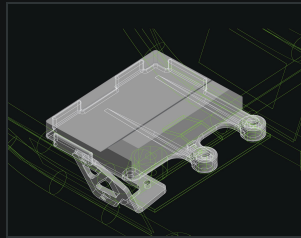
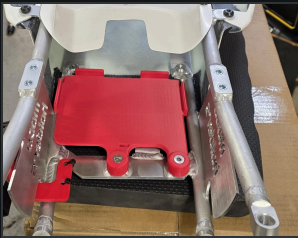
① Tail extension

Bolts to the rear node and carries the seat bracket. Four rivet nuts take the bodywork fasteners, so the tail comes off with hand tools.



④ Rectifier bracket

Mounts flat to the inside of the right side plate. The rectifier bolts on the outside where it gets air and stays clear of the tail.



⑤ ECU tray

Printed tray on the plate across the bottom rails. The round bosses sit on the frame bosses for location, then two flat head screws.

PROCESS

01
Model

02
Flat pattern

03
Cut & form

04
Test fit

05
Install

PARTS LIST

ITEM	DESCRIPTION	MATERIAL	QTY
1	Tail extension, RevA	Aluminum sheet, 0.125 in	1
2	Rear seat bracket	Stainless, purchased	1
3	Rivet nut, McMaster 95105A179	Zinc-plated steel	4
4	Rectifier bracket, RevA	Aluminum sheet, 0.125 in	1
5	ECU tray	3D printed	1
6	Flat head screw, McMaster 92125A239	18-8 stainless	2
7	ECU	Yamaha OEM	1
8	Moto Holders race subframe	Reference	-

WHAT THIS MEANS FOR YOUR PROJECT

Racers. Brackets, mounts and packaging that fit the first time. Send photos and what you need to mount.

Shops & OEMs. Sheet metal design, flat patterns, drawing packages and printed fit-check prototypes before you cut metal.



Start a project

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I review every request myself.