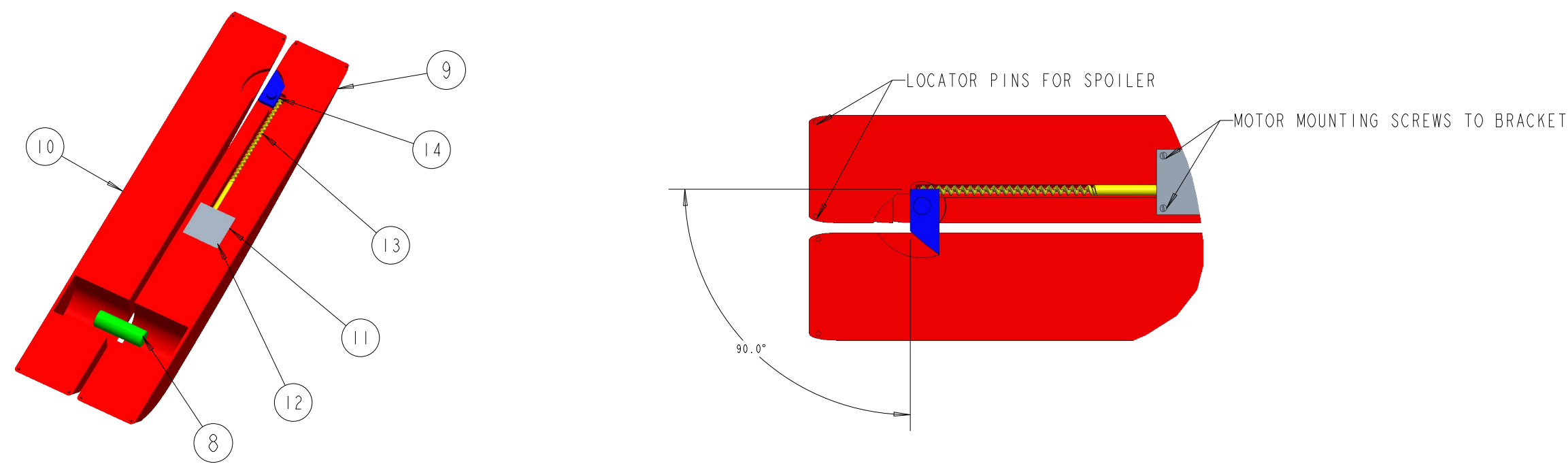
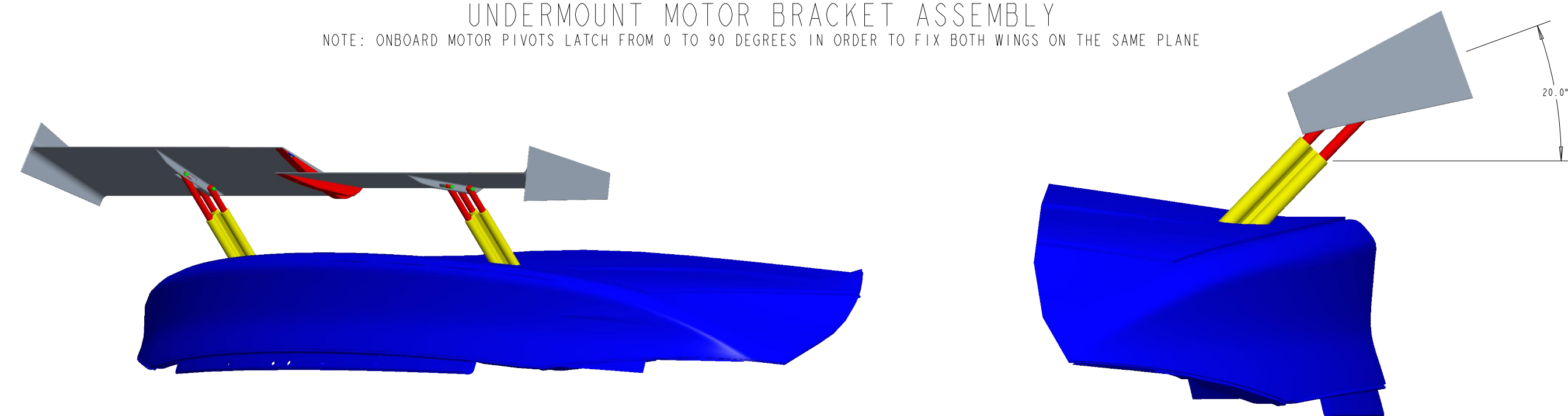


UNDERMOUNT BRACKET ASSEMBLY



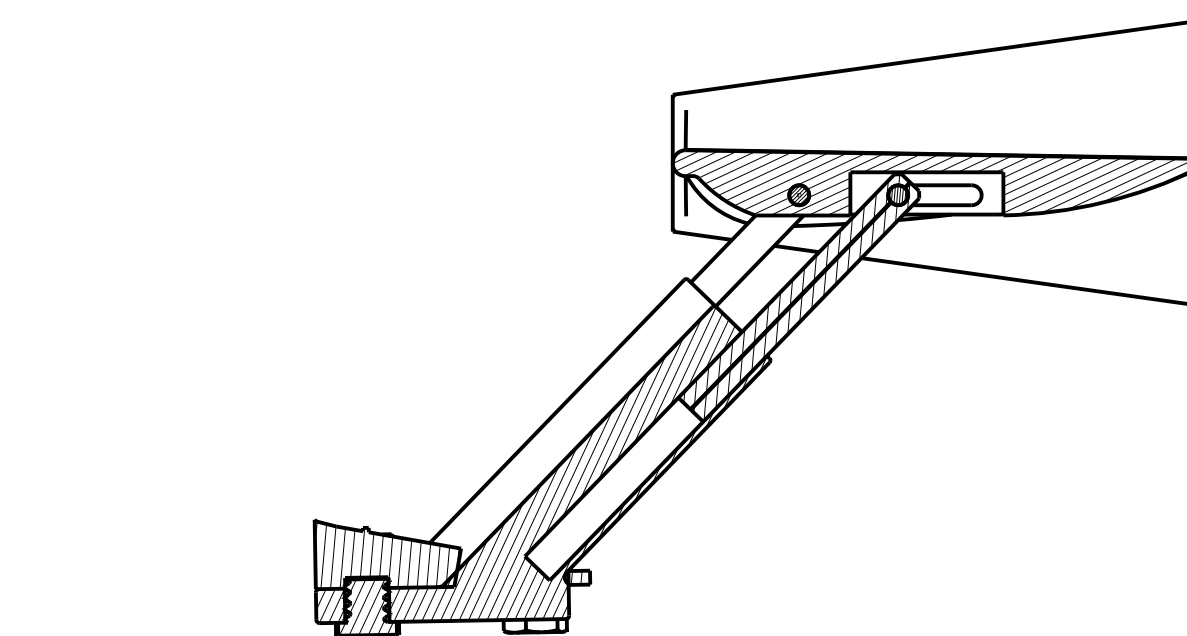
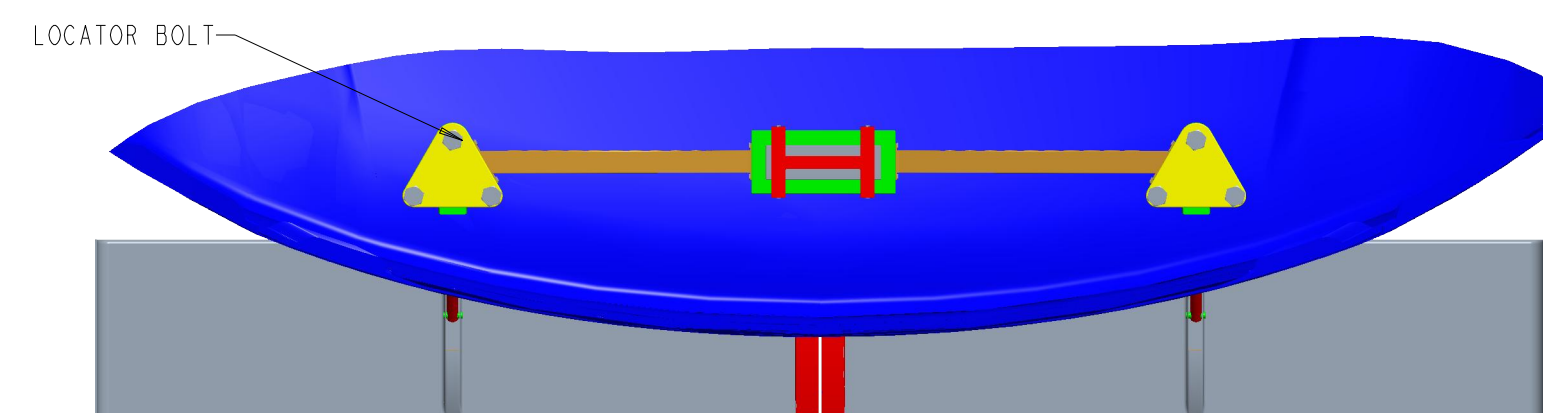
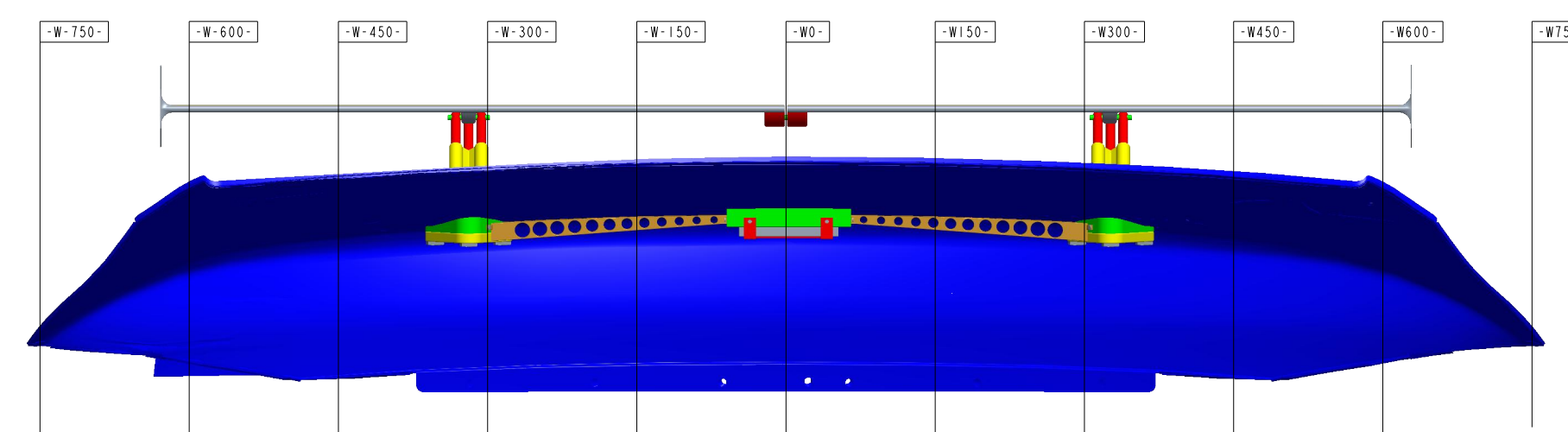
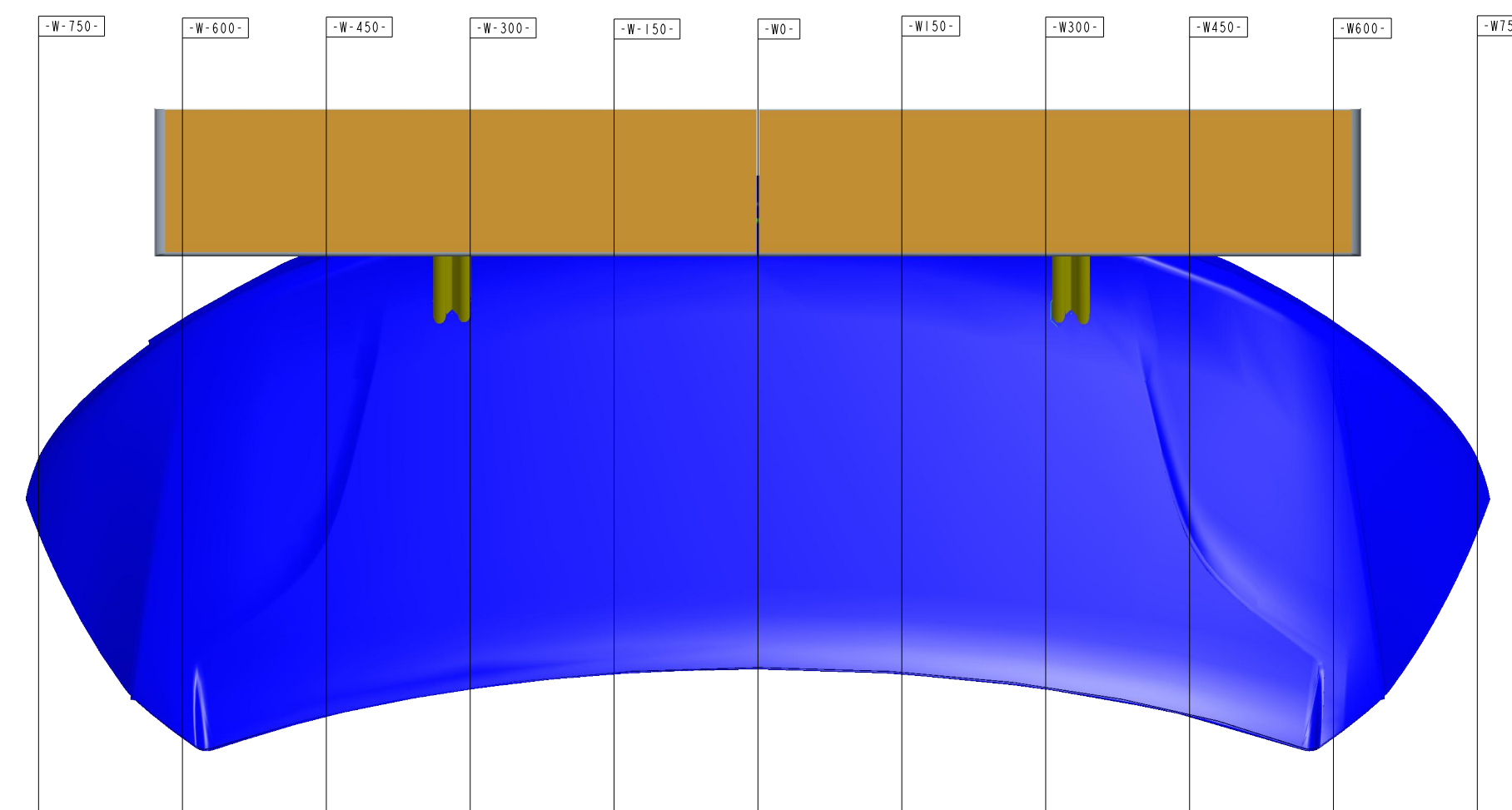
UNDERMOUNT MOTOR BRACKET ASSEMBLY

NOTE: ONBOARD MOTOR PIVOTS LATCH FROM 0 TO 90 DEGREES IN ORDER TO FIX BOTH WINGS ON THE SAME PLANE

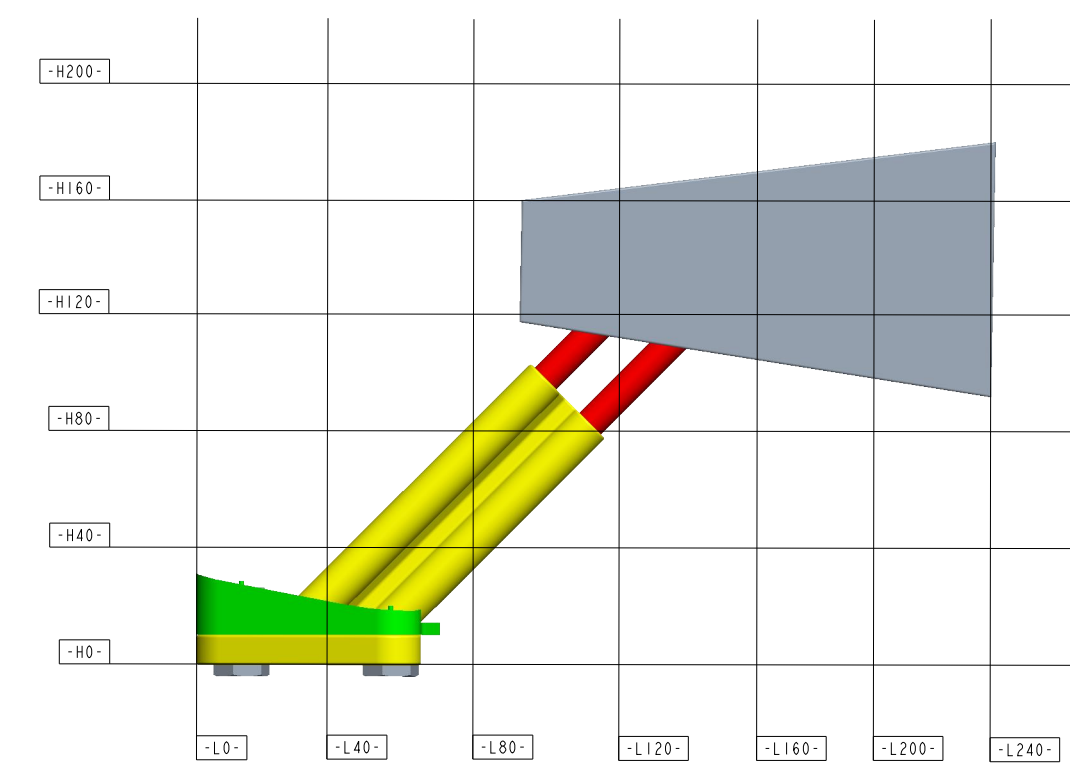


SPOILER TILT OPERATION

NOTE: REAR ACTUATOR ARMS DRIVE INDEPENDENT WINGS FROM 0-20 DEGREES



BRACKET ATTACHMENT/SPOILER ASSEMBLY SECTION VIEW



BRACKET ATTACHMENT/SPOILER ASSEMBLY

DESCRIPTION

WING ASSEMBLY IS DESIGNED TO GIVE VARYING AMOUNTS OF DOWN FORCE BASED ON EACH SECTIONS ANGLE, ASSISTING IN INCREASED CORNERING AND BREAKING ABILITY OF THE VEHICLE. WING IS DIVIDED IN TWO PARTS (SEE MECHANIZATION VIEW) WITH EACH ANGLE CONTROLLED INDEPENDENTLY TO ENHANCE PERFORMANCE. OPERATION OF WING ANGLE CONTROLLED VIA VEHICLES SPEED SENSOR AND GYROSCOPE SENSOR MOUNTED IN WING; ANGLE BASED ON VEHICLE SPEED AND DIRECTION, MANUAL OPERATION AVAILABLE WITHIN THE DRIVERS COMPARTMENT DISPLAY DASH. SPOILER ASSEMBLY UTILIZES SOLAR PANELS CONNECTED TO BATTERY BACKUP SYSTEM, WHICH POWERS THE OPERATION OF THE ACCUATORS AND DRIVE MOTORS.

ASSMEBY AND INSTALLATION

- FORM PART 15 TOP SURFACE PART 19 TOP SURFACE TO UNDERSIDE OF TRUNK.
- CUT HOLES IN TRUNK LOCATION FOR ACUTOR BRACKET.
- ASSEMBLE BATTERY/MOTORPARTS ASSEMBLY (SEE UNDERMOUNT BRACKET VIEWS).
 - INSERT BATTERY INTO BATTERY MOUNT AND BOLT ON BATTERY BRACKET TO BATTERY MOUNT (SEE UNDERMOUNT BRACKET ASSEMBLY BOLT ATTACHMENT 3).
 - BOLT RIGHT/LEFT SUPPORTS TO BATTERY MOUNT (SEE UNDERMOUNT BRACKET ASSEMBLY BOLT ATTACHMENT 2).
 - BOLT RIGHT/LEFT SUPPORTS TO TRUNK MOUNT (SEE UNDERMOUNT BRACKET ASSEMBLY BOLT ATTACHMENT 1).
 - INSERT ACTUATOR HOUSING FROM UNDERNEATH TRUNK MOUNT > INSERT BOLTS TO FASTEN TOGETHER (SEE SECTION VIEW).
 - INSERT ACTUATOR BRACKET (PART 2) THRU TRUNK MOUNT (PART 15) FROM BOTTOM > INSERT BOLTS THRU ACUTOR TO THREADED HOLES OF TRUNK MOUNT (SEE LOCATOR BOLT).
- APPLY ADHESIVE TO TRUNK MOUNTS (PART 15) TO UNDERSIDE OF TRUNK.
- ALIGN LOCATOR PINS LOCATED ON TOP SURFACE OF PART 15 TO LOCATOR HOLES ON UNDERSIDE OF TRUNK.
- FILLET WELD PART MATING EDGE OF PART 15 ALL AROUND TO UNDERSIDE OF TRUNK SURFACE.
- MOTOR ASSEMBLY
 - ASSEMBLE MOTOR, DRIVESCREW, AND LATCH, THEN SCREW INTO LEFT COVER
 - USE LOCATOR PINS TO ALIGN TO SPOILER LOCATOR HOLES ON THE UNDERSIDE (SEE UNDERMOUNT MOTOR BRACKET ASSMEBLY)
 - PRESS FIT INTO PLACE
- ALIGN SPOILER BRACKET ON UNDERPART TO HOLE ON ACUTOR ARMS 1 AND 2 (PART 6) PRESS FIT TAPER PIN (PART 7).
- PLACE ACUTOR ARM 3 THRU SLOT ON SPOILER BRACKET > PRESS FIT TAPER PIN INTO PLACE (PART 8).
- FEED WIRES THROUGH ASSEMBLY FROM BATTERY TO EACH SOLAR PANEL AND MOTOR > CONNECT WIRES TO SOLAR PANEL AND DRIVE MOTOR > MANUALLY MOVE SPOILER OVER RANGE OF MOTION TO ENSURE PROPER WIRE LENGTH.
- ALIGN AND ADHERE SOLAR PANELS COVERS TO EACH SPOILER WING TOP FACE.

PARTS LIST		
PART #	QTY.	PART NAME
1	1	TRUNK
2	2	ACTUATOR BRACKET
3	1	LEFT WING
4	1	RIGHT WING
5	2	SOLAR PANEL
6	6	ACTUATOR
7	2	FRONT PIN
8	3	BACK PIN
9	1	RIGHT COVER
10	1	LEFT COVER
11	1	MOTOR
12	4	MOTOR SCREW
13	1	DRIVESCREW
14	1	LATCH
15	2	TRUNK MOUNT
16	1	LEFT SUPPORT
17	1	RIGHT SUPPORT
18	8	SUPPORT BOLT
19	1	BATTERY MOUNT
20	1	BATTERY
21	1	BATTERY BRACKET
22	4	BATTERY BOLT
23	6	MOUNT BOLT

METRIC

STUDENT NAME:
CAYDEN COATSWORTH

SCHOOL:
BRIGHTON HIGH SCHOOL

GRADE LEVEL: 12 CATEGORY:
ENGINEERING DESIGN

EMAIL ADDRESS:
COATSWORTHCT22@BRIGHTONK12.COM

TEACHER NAME:
MATT JOURDEN