



FORMULA RENAULT 2.0
2009
BODYWORK



40

BODYWORK

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You will find below precisions on the technical regulations

GROUND-FACING BODYWORK

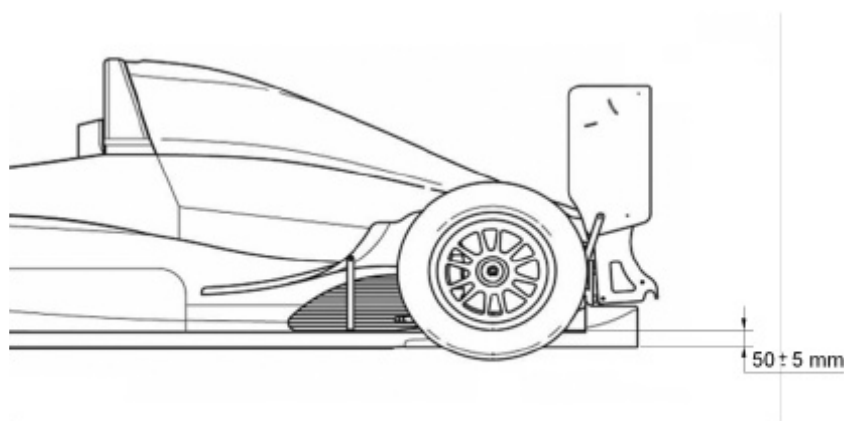
Between the furthest-rear edge of the complete front wheels and the furthest-forward edge of the complete rear wheels, all suspended parts of the car visible from below must be located on one of the following two parallel planes: the reference plane or the step plane.

Reference plane: surface between the furthest-rear edge of the complete front wheels and the furthest-forward edge of the complete rear wheels with a maximum width of 500mm symmetrical to the longitudinal axis of the car.

Step plane: all suspended parts of the car visible from below and not in the reference plane, must be positioned 50mm above the reference plane.

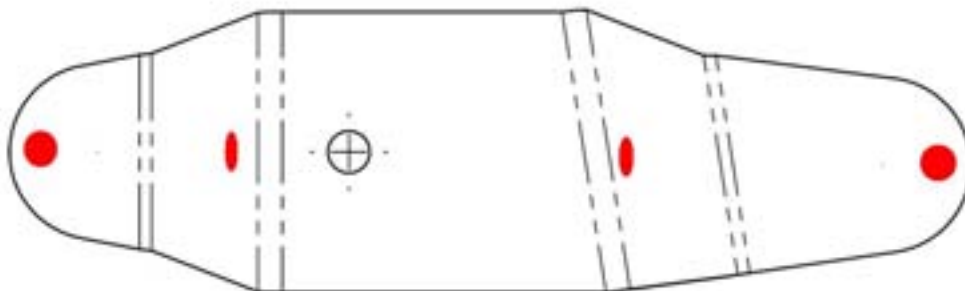
IMPORTANT: No part of the car must be positioned more than 50cm to the rear of the rear wheel axis, or more than 100cm to the front of the front wheel axis.

IMPORTANT: Rear diffuser: a tolerance of ± 5 mm is granted on the relative position of the extension of the step plane on the further rear edge of the diffuser with regard to the reference plane (see drawing below). This adjustment can be obtained by adding washers or shims between the stay main plate / diffuser (part 01 03 02 060/061) and the diffuser.



WATER PIPE SUPPORT

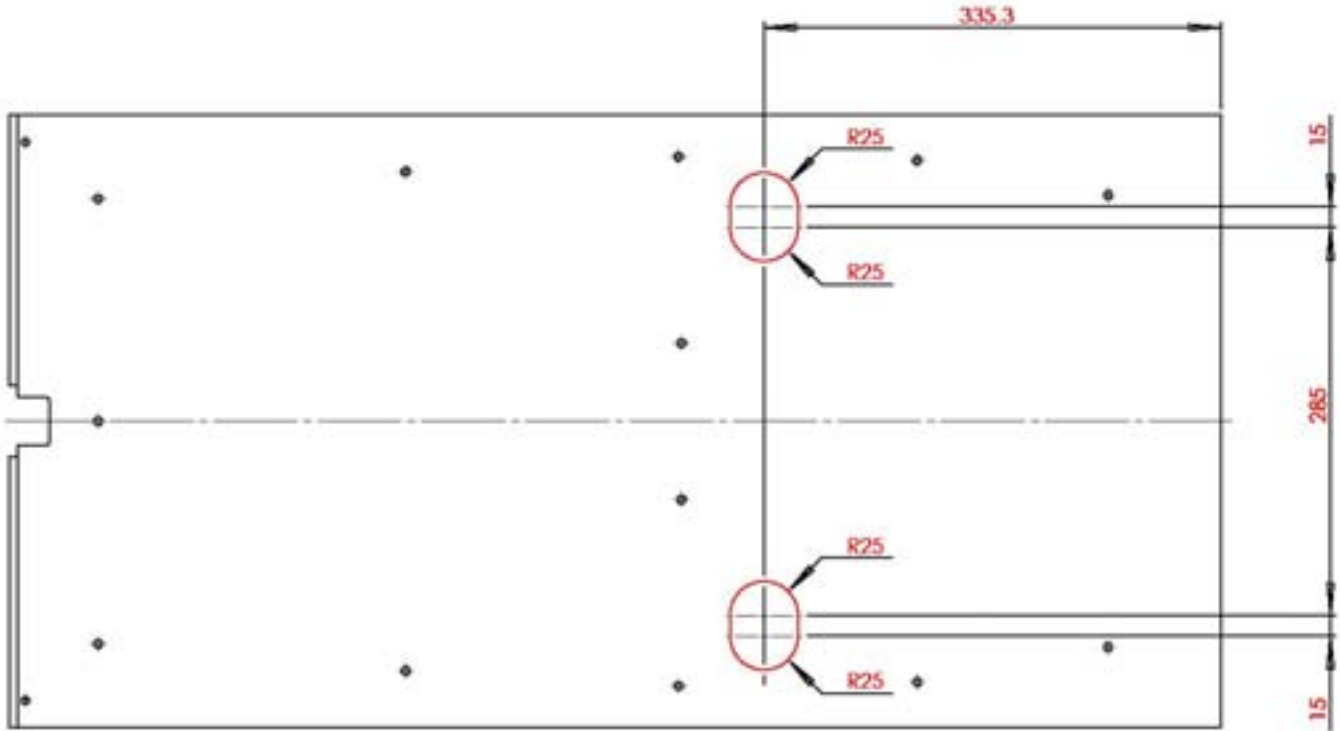
It is allowed to drill the OMEGA support (reference : 77 11 154 651) to secure the water pipes, following the picture below :



NOTA: 4 holes $\varnothing 6$ mm maximum (in red).

CENTRAL WOODEN FLOOR

The central wooden floor (ref 77 11 163 104) must be drilled in order to enable the Renault Sport scrutineers to check all the cars on the Renault Sport control plane. Two holes must be drilled according to the drawing below:



NOTA: This modification is compulsory for all the Formula Renault 2.0 championships.

BARGE BOARD

It is compulsory to improve the rear barge board support adding a new screw (flat bottom side) following the pictures below :

1. Fit a rail along the external edge of the flat bottom and plate the flank of the barge board against the rail in order to align the flank with the flat bottom edge :



2. Drill the flat bottom and the rear support ($\varnothing 5\text{mm}$) and fit a M5 bolt with a locknut:



NOTA: this screw must be a M5 screw as the original one.

FRONT WING REPAIR PROCEDURE

The front wing must be replaced if the erosion is outside the blue area (fig.1) and if the erosion depth is greater than 1.0mm.

Otherwise, the wing can be repaired with **wet lay up**, use epoxy resin and carbon fibre.

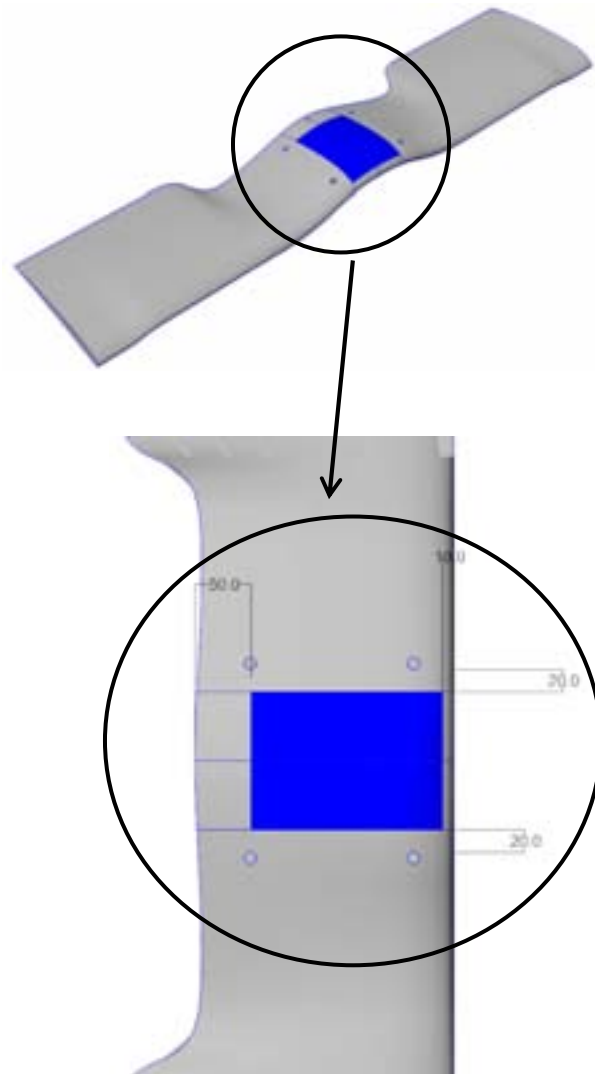


Fig. 1

1. Clean the erosion area.
2. Apply the necessary number of carbon fibre ply to restore the skin thickness at 1.4 mm (fig. 2, 3).
3. Normally the resin cures at room temperature with the use of an accelerator and a catalyst. Post curing of cold (max 80°C) cured laminates is recommended.

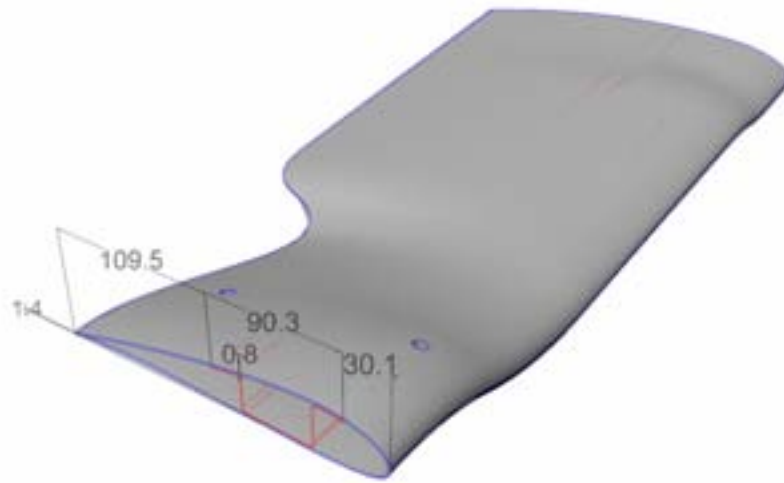


Fig. 2

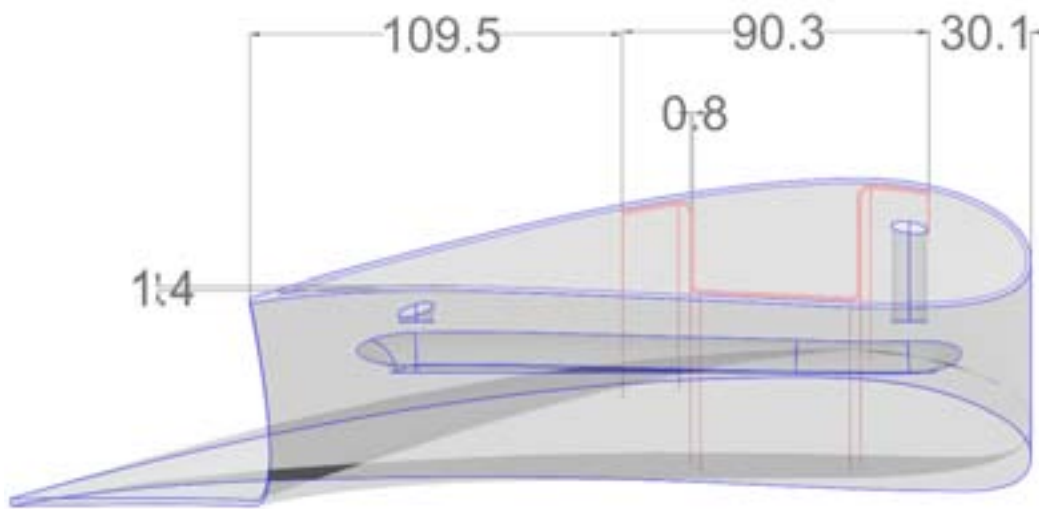


Fig. 3

NOSE REPAIR PROCEDURE

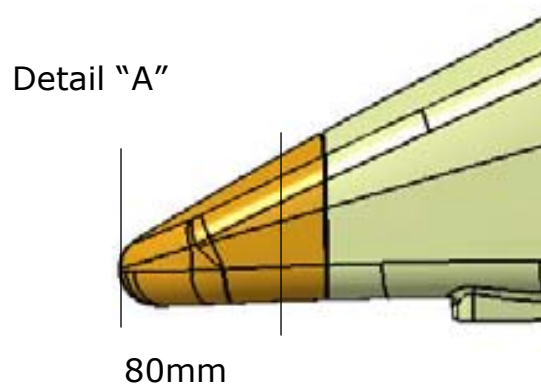
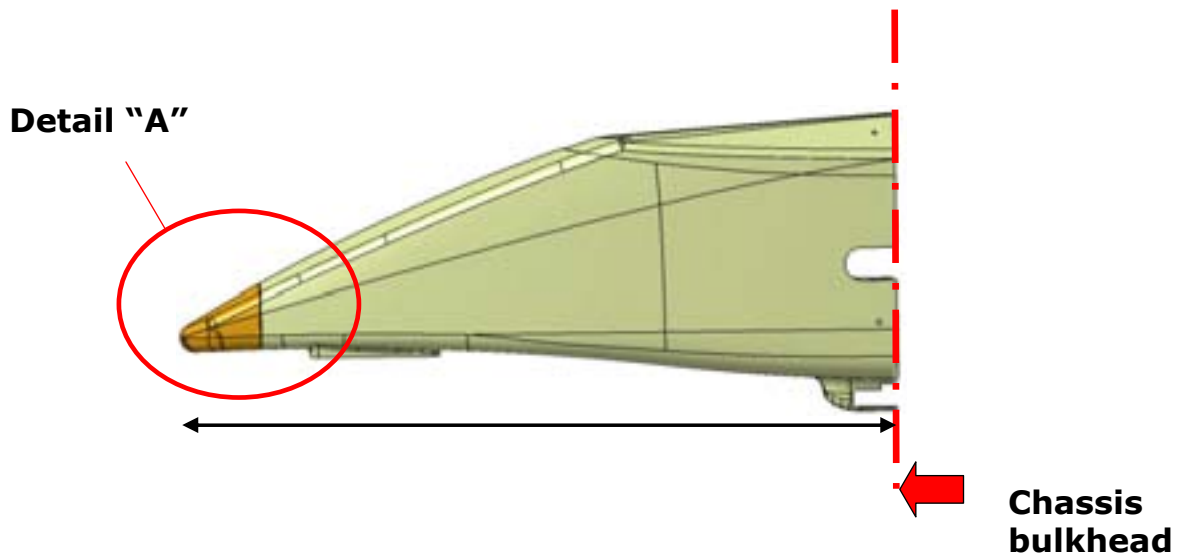
The repair procedure of this user manual is the only procedure allowed. Any nose that would have been repaired without strictly following this procedure will be considered as a non-conformity.

The front crashbox is a critical member of the car in terms of:

- Structure
- Safety
- Compliance to FIA homologations (F3, year 2005)

Applicable requirements

The following procedure is applicable only when the damage is contained in the first 80mm from the nose tip (820mm from the chassis bulkhead), all the other damages must be inspected by the manufacturer.



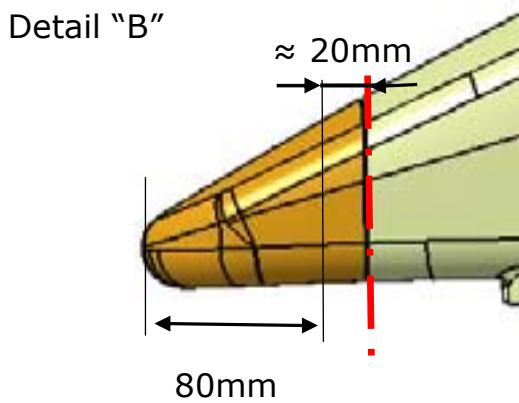
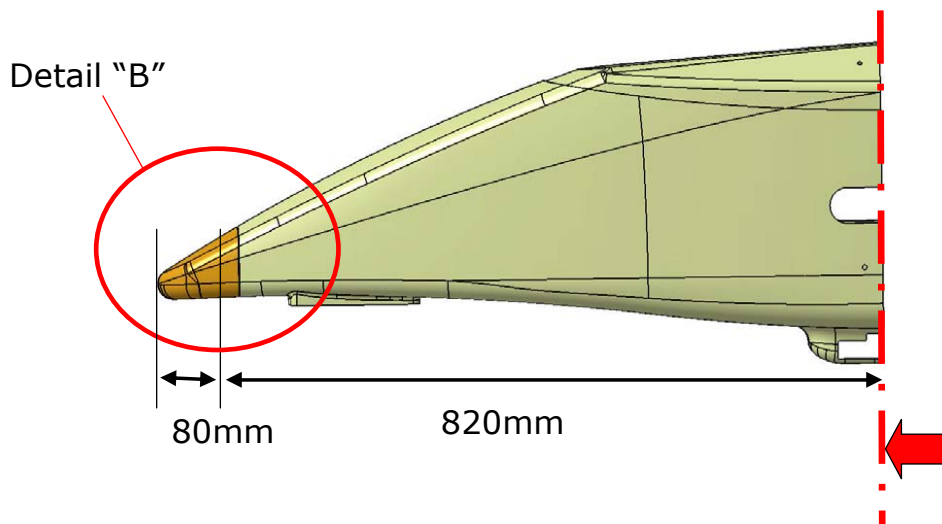
Replacement procedure

1. The specific spare part is available:

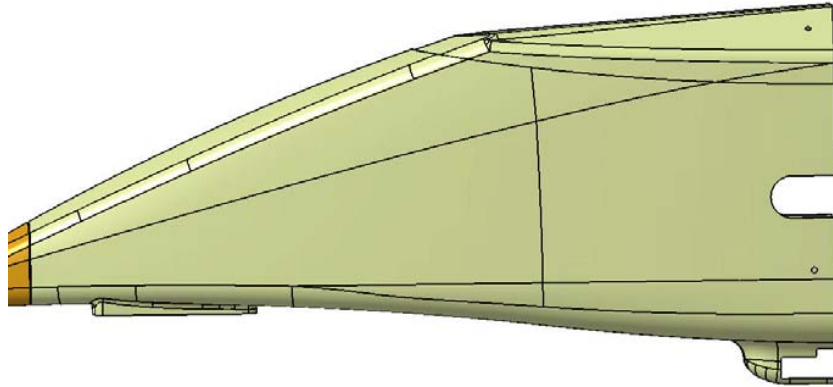
Alpine reference: 77 11 163 070 Nose tip



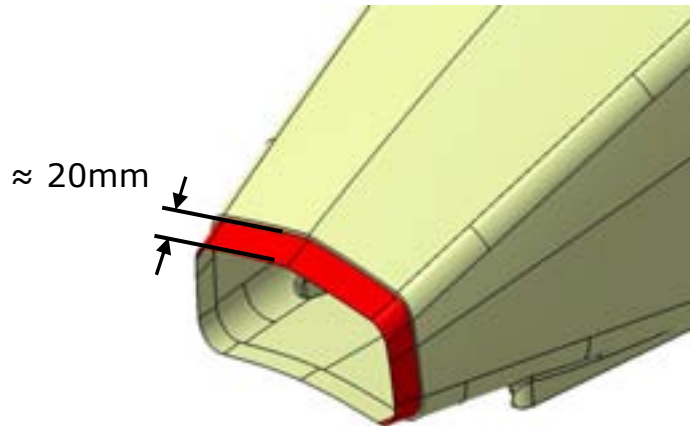
2. Trace a line parallel to the chassis bulkhead 80mm from the crashbox tip, you should find the line 20mm from the old nose tip junction.



3. Cut off the nose tip forward the traced line:

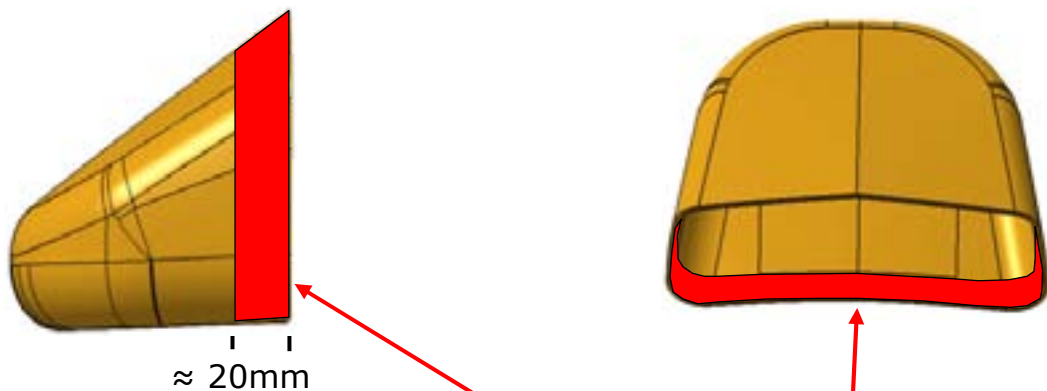


4. Using sandpaper reduce the thickness of the crashbox by about 1mm for a depth of 20mm (red area).



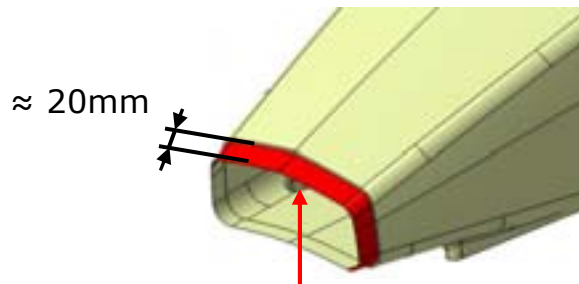
Attention must be paid to sandpaper at this stage the outer surface, at the depth of 1mm you should be able to find the resin surface (the old carbon ply should be gone).

5. Use sandpaper on the new nose tip inner surface to produce a rough surface that will match the outer surface of the crashbox.



Use sandpaper over the 20mm of the inner surface

6. Spread specific resin 3M 9323 over the junction surface, carefully respect the percentage between resin and catalyst:

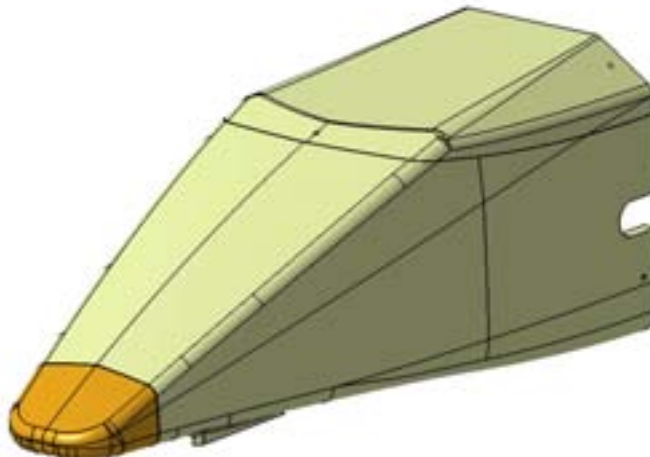


Uniformly spread resin 3M 9323 on the highlighted surface

3M 9323 Mixing specification :

	Resin	Catalyst
Weight ratio	100g	27g
Volume ratio	100g	31g

7. Put in position the new nose tip cleaning the excess of resin; new nose tip can be hold in position with high temperature tape.

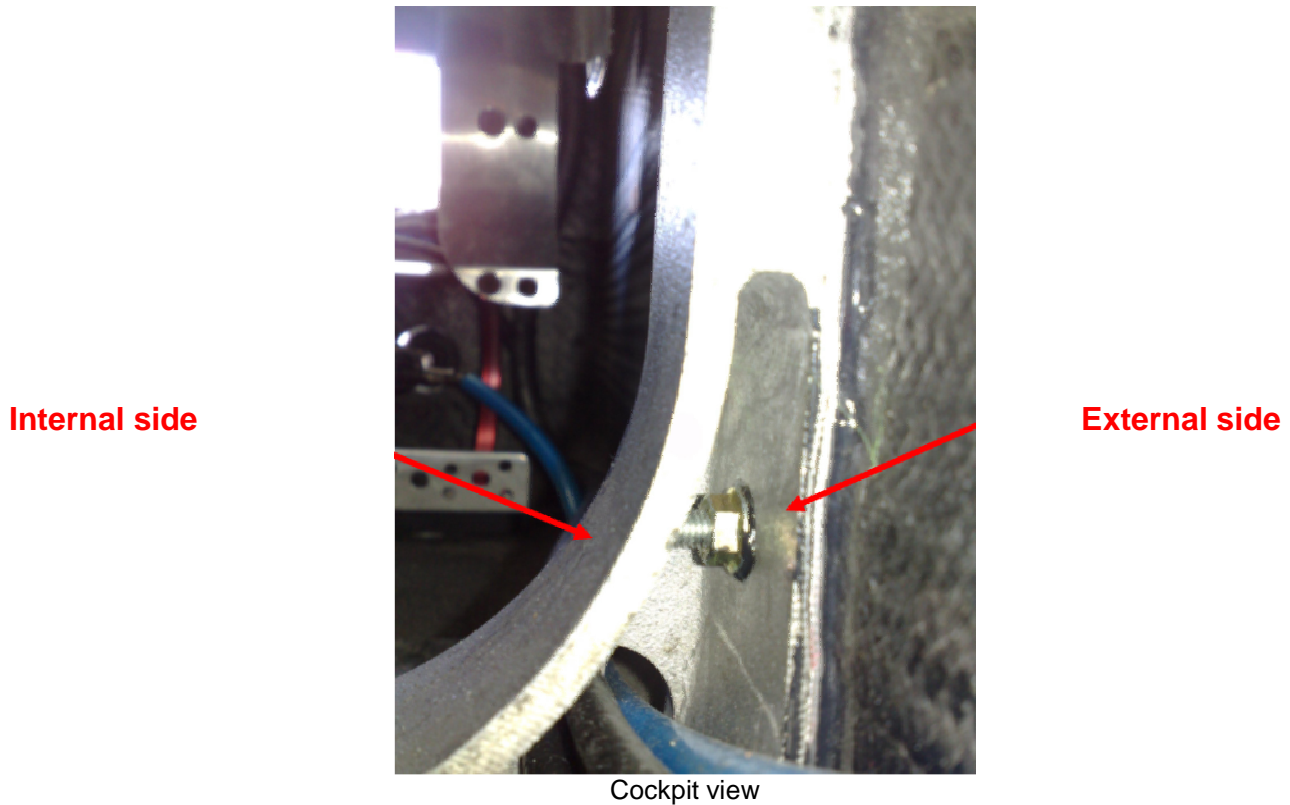


8. Cure the assembly on the oven following the specific temperature cycle for 3M 9323:

2 hours at 60°C

FRONT UPPER BARGE BOARD SUPPORT REPAIR PROCEDURE

In order to make easier any upper front barge board support repair, it is allowed to fit it with a M5 stud (8.8 minimum class quality required) right through the tub, fitted as shown on the picture below :

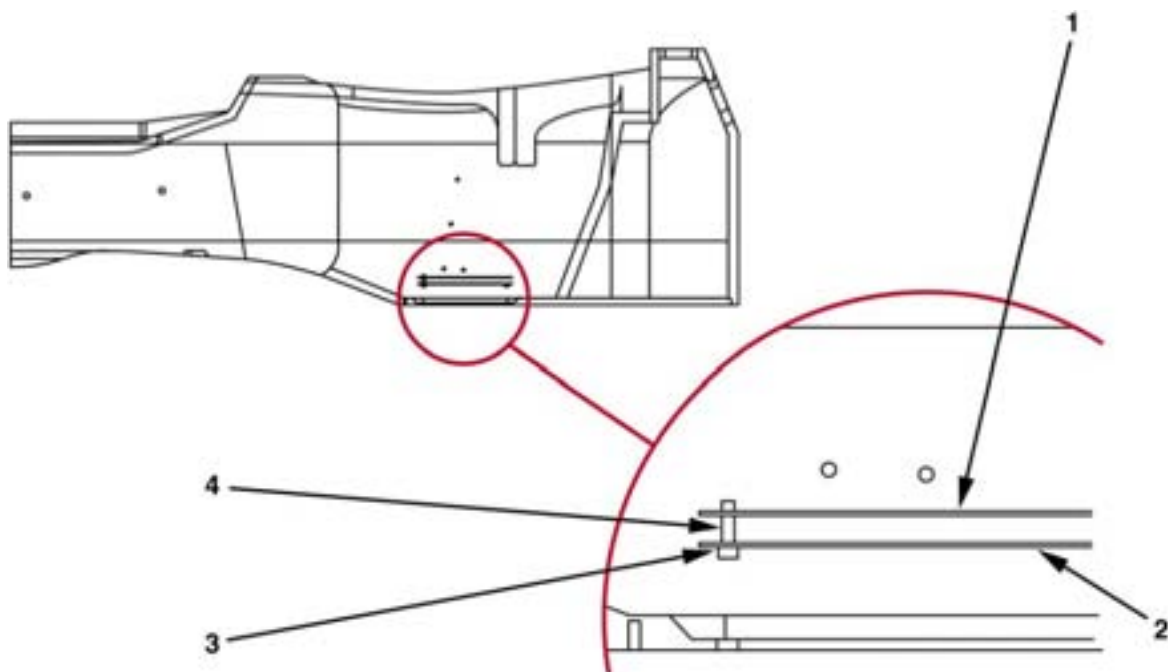


NOTA: it is mandatory to respect a maximum diameter of 5 mm to drill the tub.
It is only permitted to drill the external side of the aluminium frame.

In order to respect the regulation with regard to the minimum weight of the vehicle, ballast plates specific to the FR 2.0 are available in the Renault Sport equipment store - Ref : 77 11 154 298.

ASSEMBLY OF BALLAST PLATES

- Fit bottom plate (2). Align it with edges of body shell sunk spot.
- Use bottom plate (2) as gauge to drill body shell.
- Drill four holes for inserts (3) and 3.2mm dia. holes for rivets.
- Run sandpaper over body shell and bottom plate sections to be glued.
- Glue bottom plate (2) onto body shell using Scotch 3M Wild 9323 a/b resin, then fasten it with rivets.
- Screw the four studs (4) onto the inserts (3).
- Adjust their length as a function of the ballast thickness.
- Assemble top plate (1).
- Drill end of studs so sealing can be applied.



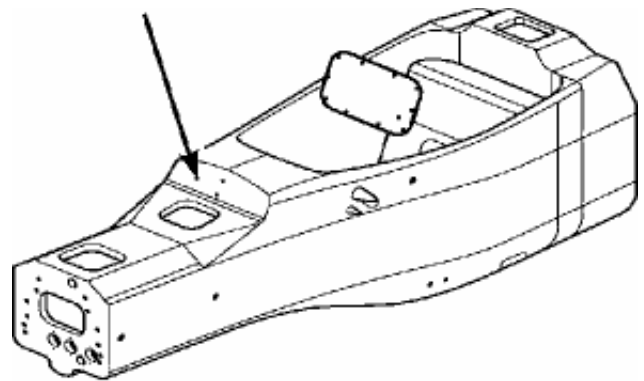
MARKING

All parts making up the bodywork, wings and bow are marked with hologram discs.

It is compulsory that they be present and that they be visible.

Contestants are in charge of the condition of discs. The arrows in the figures opposite show the location of the discs.

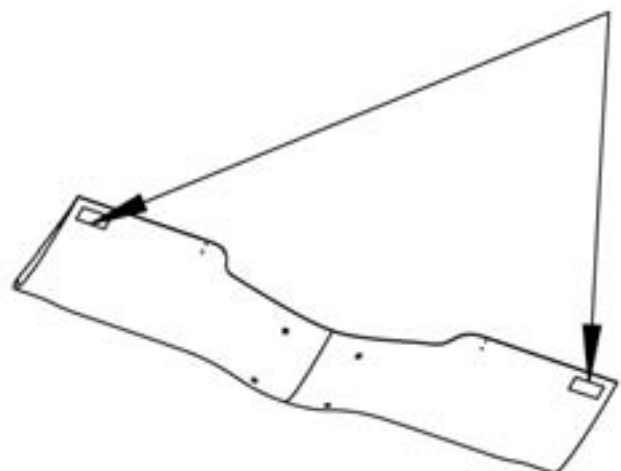
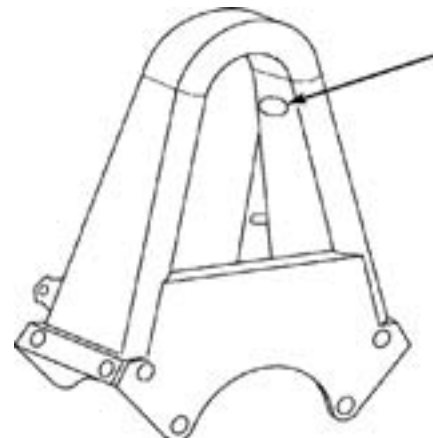
- Frame 77 11 154 350
- (1 disc).
- Nose 77 11 163 071
- (1 disc).



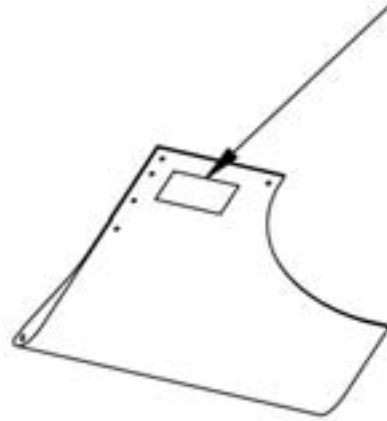
- Roll hoop 77 11 154 352
- (1 disc).



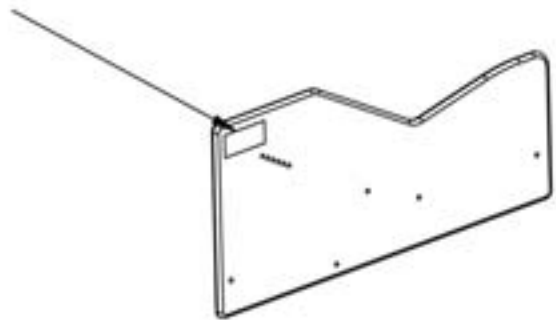
- Front wing 77 11 163 090
- (1 disc per component).



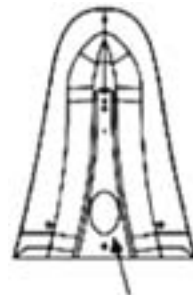
- Front wing flaps 77 11 163 079 / 080
- (1 disc per flap).



- Front wing sideplate 77 11 163 072 / 084
- (1 disc per sideplate).



- Front splashguard 77 11 163 096
- (1 disc).



- Rear floor cup 77 11 163 099
- (1 disc).

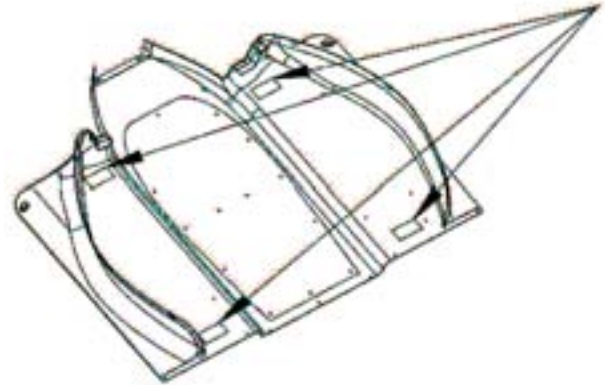


BODYWORK

Bodywork, wings and bow

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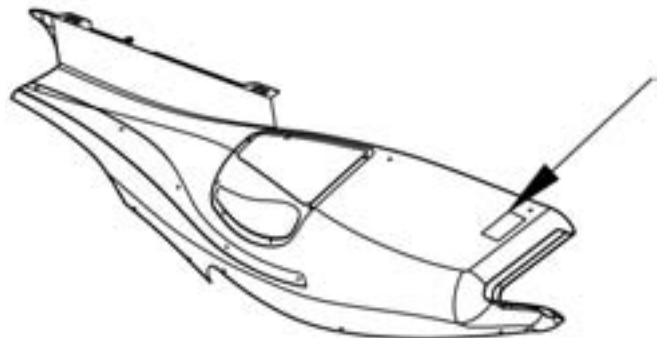
- Front floor 77 11 163 097
- (4 discs).



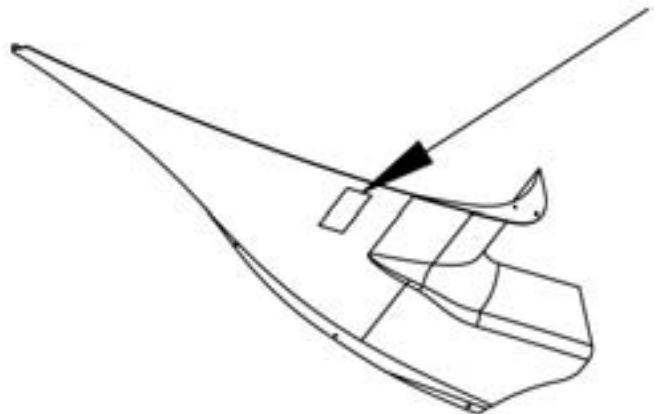
- Radiator ducts 77 11 163 107 / 108
- (1 disc on each mounting).



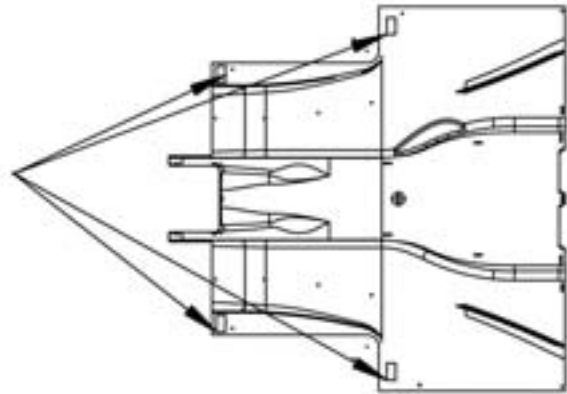
- Side pod 77 11 163 109 /110
- (1 disc on side pod).



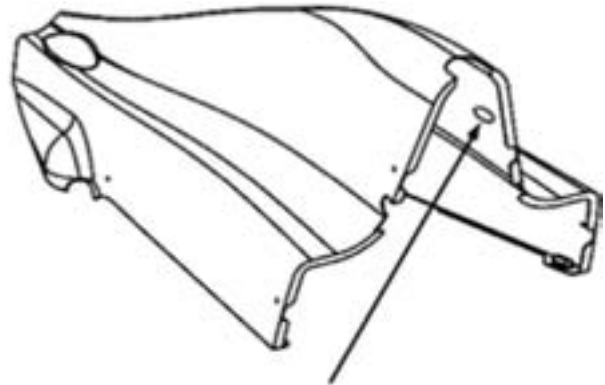
- Tyre ramp 77 11 163 113 /114
- (1 disc on each splashguard).



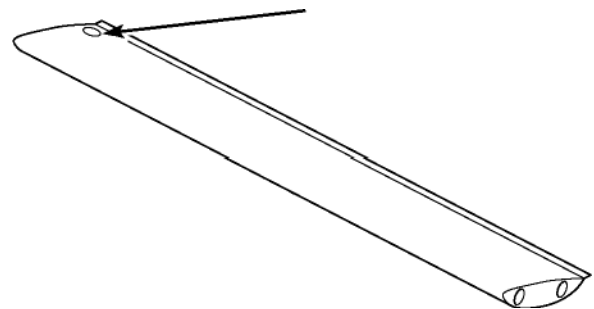
- Rear floor 77 11 163 098
- (4 discs).



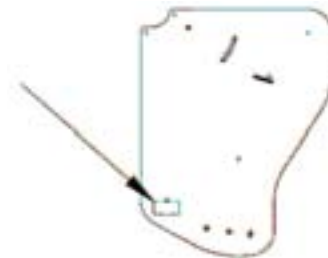
- Engine cover 77 11 154 836
- (1 disc).



- Rear wing 77 11 154 429 / 433 / 426
- (1 disc per wing).



- Rear wing side 77 11 163 120 / 121
- (1 disc).



- Front cover 77 11 163 091
- (1 disc).

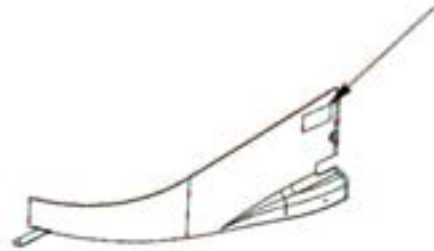


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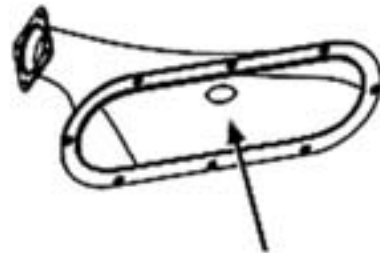
Bodywork, wings and bow

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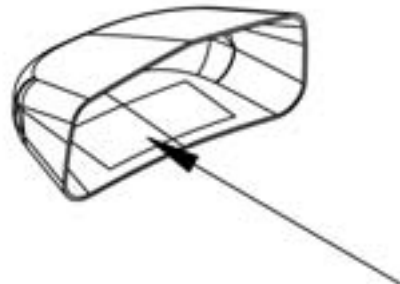
- Barge board 77 11 163 092 / 093
- (1 disc).



- Air box 77 11 154 845
- (1 disc).



- Nose end 77 11 163 070
- (1 disc)



- Intake air engine 77 11 154 846
- (1 disc).

