

Dragon 1:72 Saturn V Error List – updated 17 May 12

This file is intended to be the basis of a comprehensive list of the errors and required corrections to the Dragon 1:72 Saturn V, in its pre-completed version. It is not yet complete; any additions or corrections gratefully received.

Most of the dimensions have been read from David Weeks' drawings. In a few cases, I have directly scaled from them.

For the LES, BPC and SLA, I've incorporated [planetary@socal.rr.com's](mailto:planetary@socal.rr.com) inputs to the recent thread on the subject in the Space-Modellers group. The rest of the points are drawn from my initial comparison of the model to the David Weeks drawing sets for the SV and Apollo.

I've largely ignored internal detail, as this is hidden on the as-launched configuration.

Launch Escape System

Dimension	Should be(mm)	Measures as (mm)	Comment
Nose Cone	13.1	11	2mm too short
Cylindrical section and skirt	86	88	2mm too long
Strut section	42.75	42	Close

- There are no openings (or even raised "blow-out" covers as seen during launch) depicting either the 2 Tower Jettison Motors or the Pitch Control Motor.
- One of the 8 small struts nearest the CM is missing. The other 7 are too long and should be at a steeper angle.
- There is also no raised detail depicting the two cable ducts that run most of the length of the LES tower.
- There are no scribed details to depict the Canard Doors.
- The skirt lacks the reinforcement sections in line with the tower legs.

Boost Protective Cover

- No small circular window openings for the two CM windows (easily drilled out).

Service Module

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	62.1	62	Correct
Diameter	54.3	54.5	Correct

External SM panel detail is accurate, unless you want to build a J Mission vehicle
Rendezvous and docking light missing
EVA floodlight missing.

Spacecraft LM Adapter (SLA)

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	118.2	119	Close

Petal Section	89.4	91.5	2mm too long
Fixed Section	28.7	27.5	1mm too short
Forward Diameter	54.3	56	Close
Aft Diameter	91.7	92	Correct

- Panel detail is generic on all four sides, omitting access panels, reinforcement areas etc. The detail on the SLA is mostly overstated.
- The “zigzag” pattern between the SLA and IU exists on the real vehicle, but is very restrained (looks to be only a few mm high). [Corrected, thanks to David Weeks]
- 4 small "tabs" are needed to support the LM Descent Stage so that the LM sits at the proper height in the SLA - otherwise it sits far too low in the SLA resting on the small rod support under the Descent Stage engine on the plastic black base. It goes without
- There are no additional decals for the LES, BPC and SLA/IU.

Instrument Unit

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	12.7	12.5	Correct
Diameter	91.7	92	Correct

- IU has no external (or internal detailing).

SIVb Stage

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	167	168.5	Close
Forward Skirt	43	47	4mm too long
LH2 Tank	94.75	88	5.25mm too short
Aft Skirt	30.2	35	4.8mm too long
Diameter	91.7	92	Correct

- Forward skirt
 - o Forward skirt has 108 stringers - correctly! However stringers tops are flush with tank mould line - stringers should sit on top of tank mould line.
 - o Separate moulding of forward stringer portion (attached to IU/SLA) is slightly conical, with the aft portion about 1mm wider than the forward. This results in a step in the stringer section.
 - o No umbilicals
- LH2 Tank body.
 - o Systems tunnel incorrect cross section, with strange lump at rear.
 - o Aux tunnel slightly too long at 54 mm; should be 52. Cross section ok.
 - o Joint seams visible
- Aft Skirt
 - o Only has 108 stringers - should have 144.
 - o No ullage motors
 - o APS modules correct size and shape - wrong colour!
 - o LH2 Feed fairing incorrect shape and size,

- LH2 fairings incorrect shape and size
 - No umbilicals, etc
 - Thrust structure is incorrect if you want to display a separated vehicle.
 - Simplified J-2 engine
- Summary: Fixing this stage is made harder by the shortfall in tank length. This can probably be fixed by adding a circular section to the aft end of the tank. The incorrect stringers on the aft skirt, and those that extend from the SIVb through the Interstage to the SII, will need to be redone completely, taking some difficult sanding and replacing.

SII/SIVb Interstage

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	80.2mm	81mm	Correct
Forward Diameter	91.7	92	Correct
Aft Diameter	139.7	139	Close

- Only has 108 stringers - should be 144.
- No separation motor fairings.

SII Stage

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	268	261.5	6 mm too short
Forward Skirt	37.5	20.5	17 too short
LH2 Tank	199.6	193.5	6mm too short
Aft Skirt	30.7	47	17mm too long
Diameter	139.7	139	Close

- Forward Skirt
 - stringers should taper onto raised band
 - Only has 108 stringers - should be 144.
 - No umbilicals, aerials or access door
 - Forward tank top is conical, rather than hemispherical. Can be replaced with EMA dome if desired
 - Stringers flush with SII tank body mould-line; should be proud.
- LH2 Tank Body:
 - no raised portions:
 - At top or bottom of tank section
 - At bottom of tank section
 - At join to lower interstage
 - Formed in 2 halves - cross section not circular and with poor joins - require significant filling and sanding. Circular formers needed
 - LH2 feed ducts - too wide, forward tapered sections too short, centre section too short, missing fairing in centre
 - LH2 recirculation duct missing
 - LH2 fill and drain fairing too large, wrong shape
 - O2 Vent totally wrong (Dragon have duplicated LH2 fill and drain)
- Rear Skirt
 - Rear skirt has 108 stringers - should be 216. Stringers are slightly too wide.
 - Stringers flush with SII tank body mould-line; should be proud.
 - Thrust structure is totally incorrect.

- Summary: this Stage will be a pain to fix. The tank lengths, skirt lengths and stringer numbers are all wrong. The upper skirt, like the Interstage and SIVb, will either require all the stringers sanding off, or need to be replaced in toto. New sections of tank will need to be spliced in, but adding the tank reinforcement bands provides an opportunity to cover the splice marks. The upper and lower skirt lengths will also need fixing.

SI/SII Interstage

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	77	77	Correct
Diameter	139.7	139	Close

- 108 stringers - should be 216
- Ullage motors lack covers
- No access door
- No separation charge detail
- 4 separation motors – correct for some missions – check details.
- Summary: Correctable by adding a stringer between each of the moulded ones. The result will be slightly off as the stringers are a little too wide, but should look ok. Lots of detail to add.

SIC Stage

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	504.1	500	4mm too short
Forward Skirt	42.5	47	4.5mm too long
LOX Tank	190.25	178	11.75mm too short
Intertank	87.5	94	6.5mm too long
RP-1 Tank	101.35	96	5.3mm too short
Aft Skirt	82.4	85	2.5mm too long
Diameter	139.7	139	Correct

(Note Dragon have made the SI Forward Skirt identical to the SII Aft Skirt – and both are too long!)

- All corrugated sections have 108 stringers. Correct for Intertank(!), but should be 216 on fwd skirt, 128 on aft skirt.
- Outboard engine fairings are incorrect shape, with too rounded a plan shape and too short; should be wrong shape, too wide and too short. Should be xx mm tall, measure as 92mm. There should also be a slight gap between the fairings and the Aft Skirt. Noe of the bracing structure inside the fairing is included. New fairings needed.
- Fins are flat plates. Should be triangular and much thicker.
- Systems Tunnel too fat, not corrugated, extends too far down.
- No umbilicals, access doors, aerials or other details
- Summary: Another pain. The real problems are the 17mm shortfall in overall tank length, the Aft Fairing stringers and the completely botched engine fairings.

F-1 Engines

Dimension	Should be(mm)	Measures as (mm)	Comment
Overall length	80.2	78	2mm short
Nozzle Diameter	52.2	45	7mm too narrow

- Engines are simplified, too narrow, and missing batting.

Overall Summary

While very disappointing, (why did Dragon not simply buy a set of David Weeks drawings?), the model looks impressive as a display for those who are not consumed by the need for accuracy. For the “stringer counters” (myself included), it is a potential aid to building an accurate representation.

I had started to build a 1:72 Saturn Ib, and have various lengths of acrylic tube in the garage that I had planned to use for scratch-building a 1:72 Saturn V. The earlier Dragon models have made the SIb easier, as I can use the SLA, CSM and LES. For the SV, the Dragon model is also a source of parts, but will still need another £100 worth of 139mm acrylic tube for a start. I can use the SLA, CSM, LES, SIVb, Interstages and SI Intertank, together with some of the F-1 and J-2 engines. This makes the model not as bad a buy as it might have been.

Overall, I'll treat this as a glass half full – I'd have liked the rest but will settle for what I've got and top it up myself!

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