BRS-AWD Parts explanation

Here some insights to understand the CAD of the BRS-AWD Drive

First things first : AWD why do I (or don't I) need it ?

AWD Drives on a machine, and specifically on the VCORE will add some interesting specifications

- Twice the torque (2 motors added)
- More heaven torque transmission ; since the belt is long, torque is apply at only 2 spots on the machine, adding 2 motors in the front will balance that across the full motion
- A better Input shaper value ; essentially made by the 2 previous points ; leading to a ringing reduction at high acceleration Level
- An higher Shaper recommanded value leading to an higher acceleration rates without ringing effects
- Just cool as any mod I want to implement 😉

It has some cons too :

- Higher power consumption, 2 more motors and drivers
- Add a bit of complexity
- Need of a 40mm longer belt
- Needs some assembly time on a working machine
- Some cost associated (motors + drivers)

This mod is not mandatory to have a nice working machine, but can open new horizons to those willing to go further in the high speed/acceleration range with a quality factor in mind.

Prequisite :

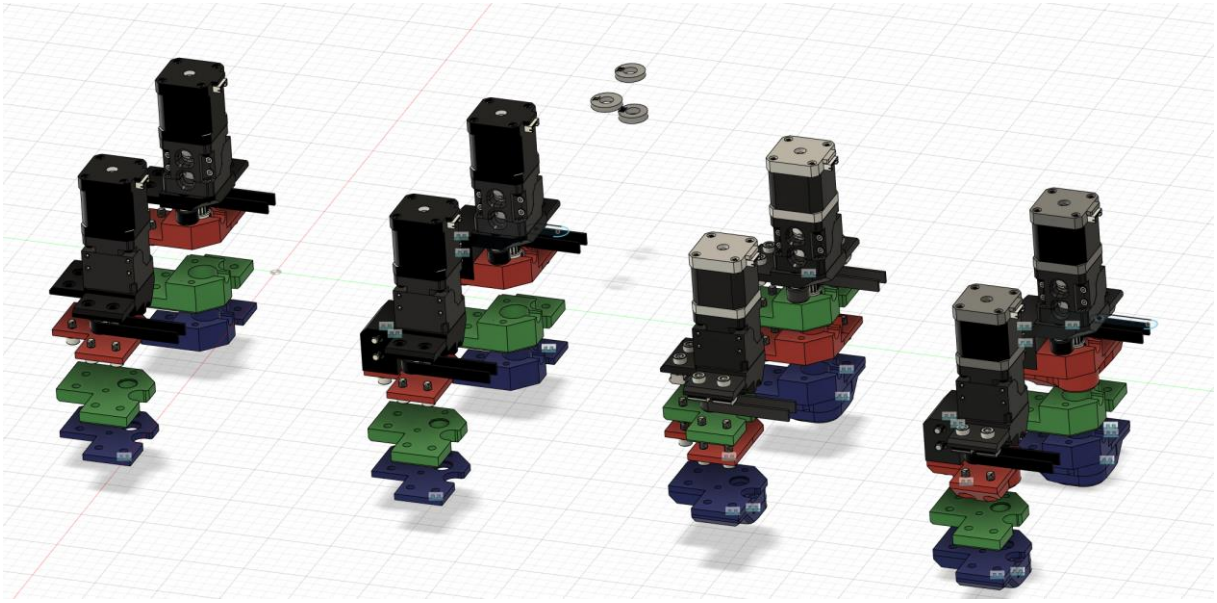
- XY plan motors need to be the SAME ; the 4 of them
- -Drivers associated with those motor need to be the SAME
- -X, X1, Y, Y1 parameters and rotation distances need to be the SAME

Compatibility :

- Vcore 3.0 with or without enclosure 1.0
- Vcore 3.1 with or without enclosure 1.0 or 2.0
- All opened front iterations
- L3ver M1, M2, Zupgrade 1.0 or 2.0
- …

Parts Layout :

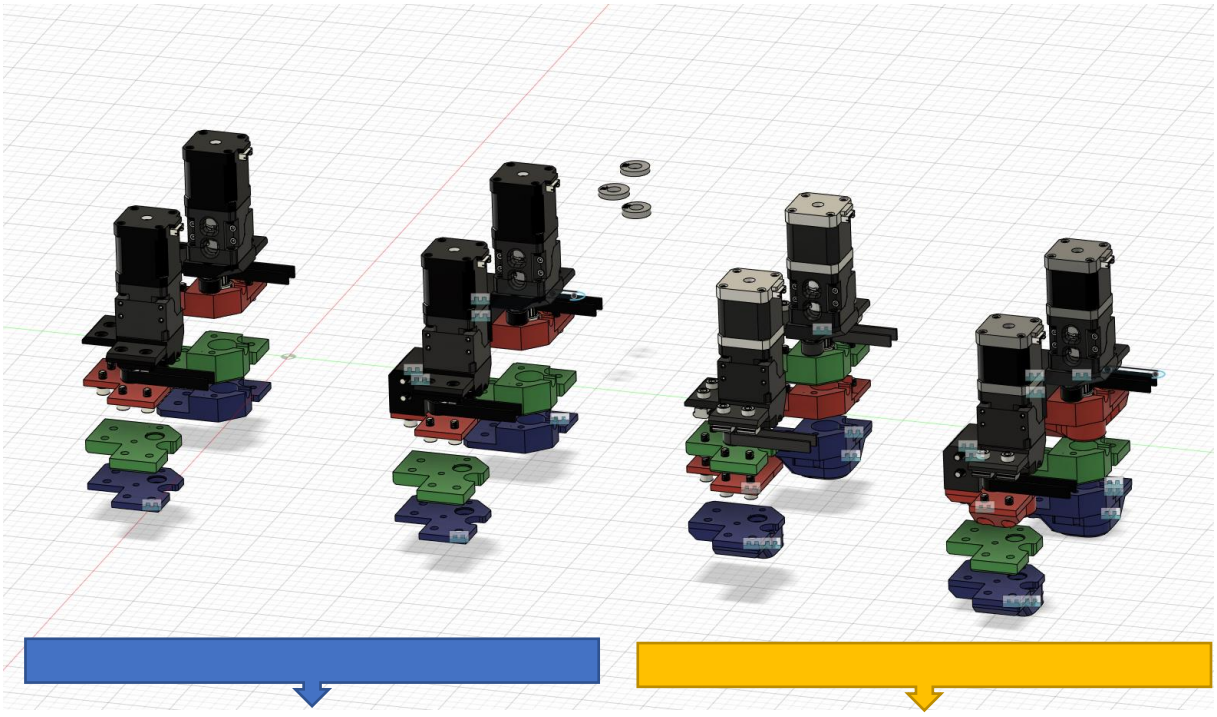
Once the CAD opened, you will se a LOT :



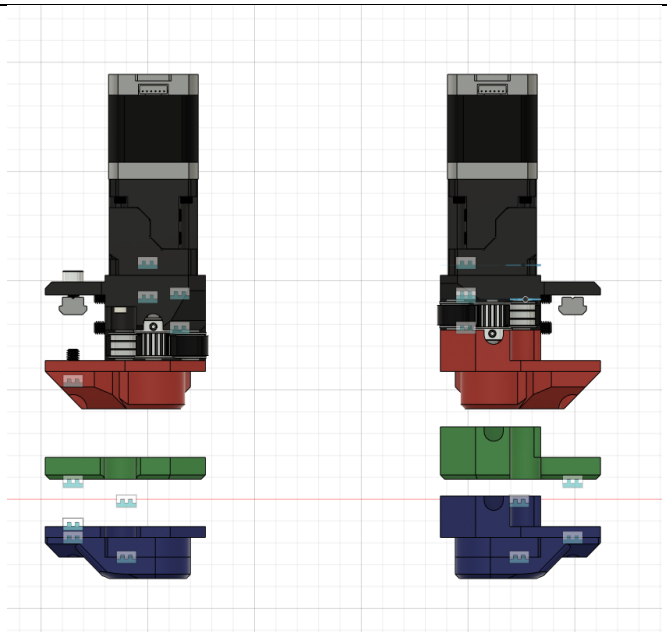
All this version are made to accomode tho more version possible across all owners of any VCORE 3.x modded or not

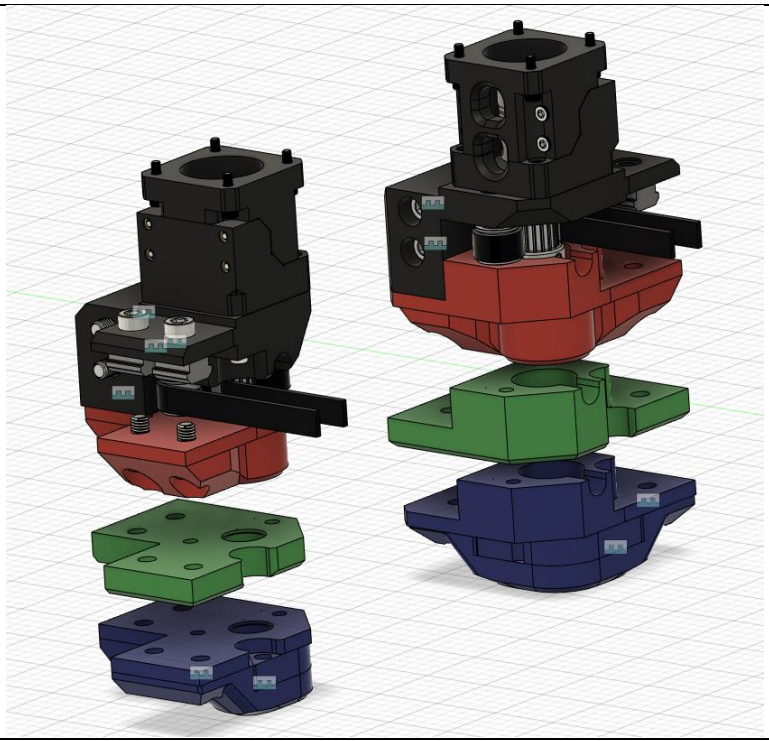
If you have a question releative to the compatibility in your case specifically, contact direcly BRS-Engineering or Florent Broise, on Facbook, Discord or via mail at contact@brs-engineering.com

Layouts :

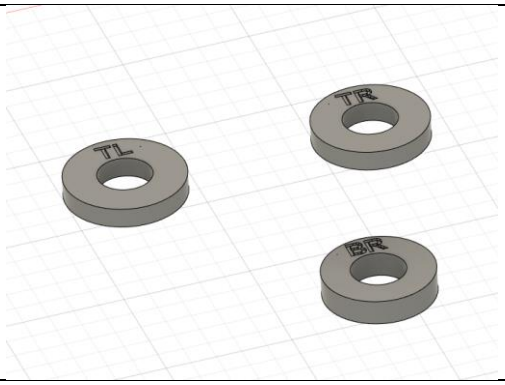


VCORE 3.1		VCORE 3.0	
Closed Front	Opened Front	Closed Front	Opened Front

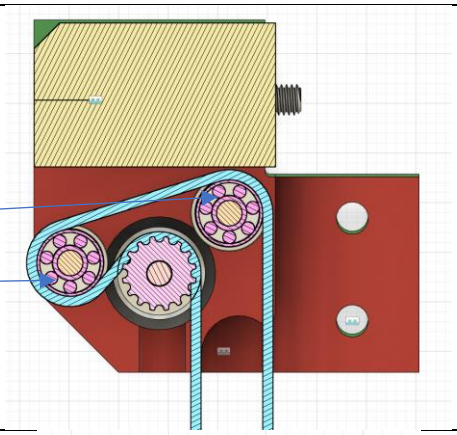
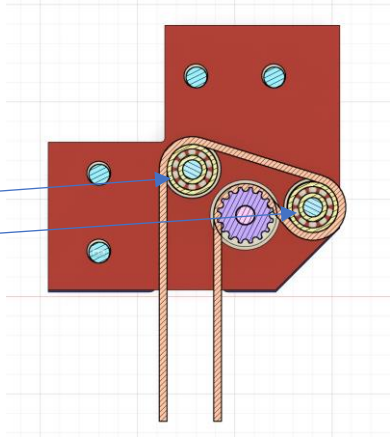
Black Parts Mandatory parts across all variations **Red parts :** Z-upgrade 2.0 with SFU1204 **Green Parts :** Stock Vcore **Blue Parts :** Z-upgrade 2.0 with SFU1605		**Black Parts** Mandatory parts across all variations **Red parts :** Z-upgrade 2.0 with SFU1204 **Green Parts :** Stock Vcore **Blue Parts :** Z-upgrade 2.0 with SFU1605

Black Parts Mandatory parts across all variations **Red parts :** Z-upgrade 2.0 with SFU1204 **Green Parts :** Stock Vcore **Blue Parts :** Z-upgrade 2.0 with SFU1605		**Black Parts** Mandatory parts across all variations **Red parts :** Z-upgrade 2.0 with SFU1204 **Green Parts :** Stock Vcore **Blue Parts :** Z-upgrade 2.0 with SFU1605

Bearings Locks :

Bearings locks is a new thing I developped here, A good way to secure the F695-2RS bearings by pressfiting it. • TL : Top lock left • TR : Top lock right • BR : Bottom lock left	

Belt Alignement

The stock Vcore 3.0 use either idlers or MR / F695 bearings stacks. Here I developped the alignement for a bearing conversion since idlers are prone to fail. MR Stack F695 Stack	
The stock Vcore 3.1 uses by default F695 stack with new offets on the gantry plates F695 stack F695 stack	

The manual is actually in the making, and will be soon available.