



ACHV cable replacement
Reference document
ALFG-061-BA/BB Front left
ALFG-063-BA/BB Front right
ALFG-067-BA/BB Rear left
ALFG-069-BA/BB Rear right

Required parts list

Red items come with the cables. Black are separate end items.

ALFG-061-BB, Left front cable

- Qty 3: ABJA-062-AA, SEAL - O-RING 25.6 X 27.6 EPDM
- Qty 3: ABJA-063-AA, SEAL - O-RING 13.35 X 14.35 EPDM
- Qty 1: ALFG-060-AA, Busbar cover
- Qty 2: ABBB-110-AA, M4x.7x8.0 screw
- Qty 3: ABBB-119-AA, M5x.8x14 screw
- Qty 3: ABBE-023-AA, 5x9x.6 Belleville washer
- Qty 4: ABBB-120-AA, M6x1.0x30 screw
- Qty 6: ABBE-024-AA washer, 6x9.5x.7 Belleville washer
- Qty 1: ABBE-035-AA, 6.6x9.22x1.98 split washer
- Qty 2: ABBB-012-AA screw, M6x1.0x20 screw
- ABJA-077-AA Liquid Gasket Loctite SI 5900 (mfg p/n: 40478)

ALFG-063-BB, Right front cable

- Qty 3: ABJA-062-AA, SEAL - O-RING 25.6 X 27.6 EPDM
- Qty 3: ABJA-063-AA, SEAL - O-RING 13.35 X 14.35 EPDM
- Qty 1: ALFG-060-AA, Busbar cover
- Qty 2: ABBB-110-AA, M4x.7x8.0 screw
- Qty 3: ABBB-119-AA, M5x.8x14 screw
- Qty 3: ABBE-023-AA, 5x9x.6 Belleville washer
- Qty 4: ABBB-120-AA, M6x1.0x30 screw
- Qty 6: ABBE-024-AA washer, 6x9.5x.7 Belleville washer
- Qty 1: ABBE-035-AA, 6.6x9.22x1.98 split washer
- Qty 2: ABBB-012-AA screw, M6x1.0x20 screw
- ABJA-077-AA Liquid Gasket Loctite SI 5900 (mfg p/n: 40478)

ALFG-067-BB, Left rear cable

- Qty 3: ABJA-062-AA, SEAL - O-RING 25.6 X 27.6 EPDM
- Qty 3: ABJA-063-AA, SEAL - O-RING 13.35 X 14.35 EPDM
- Qty 1: ALFG-060-AA, Busbar cover
- Qty 2: ABBB-110-AA, M4x.7x8.0 screw
- Qty 3: ABBB-119-AA, M5x.8x14 screw
- Qty 3: ABBE-023-AA, 5x9x.6 Belleville washer
- Qty 4: ABBB-120-AA, M6x1.0x30 screw
- Qty 4: ABBE-024-AA washer, 6x9.5x.7 Belleville washer
- Qty 1: ABBE-035-AA, 6.6x9.22x1.98 split washer
- Qty 2: ABBB-150-AA, M6x1.0x23 screw
- Qty 2: ABBD-103-AA, M6x1.0x3.4 U nut
- ABJA-077-AA Liquid Gasket Loctite SI 5900 (mfg p/n: 40478)

ALFG-067-BB, Left rear cable

- Qty 3: ABJA-062-AA, SEAL - O-RING 25.6 X 27.6 EPDM
- Qty 3: ABJA-063-AA, SEAL - O-RING 13.35 X 14.35 EPDM
- Qty 1: ALFG-060-AA, Busbar cover
- Qty 2: ABBB-110-AA, M4x.7x8.0 screw
- Qty 3: ABBB-119-AA, M5x.8x14 screw
- Qty 3: ABBE-023-AA, 5x9x.6 Belleville washer
- Qty 4: ABBB-120-AA, M6x1.0x30 screw
- Qty 4: ABBE-024-AA washer, 6x9.5x.7 Belleville washer
- Qty 1: ABBE-035-AA, 6.6x9.22x1.98 split washer
- Qty 2: ABBB-150-AA, M6x1.0x23 screw
- Qty 2: ABBD-103-AA, M6x1.0x3.4 U nut
- ABJA-077-AA Liquid Gasket Loctite SI 5900 (mfg p/n: 40478)

Removing existing harness

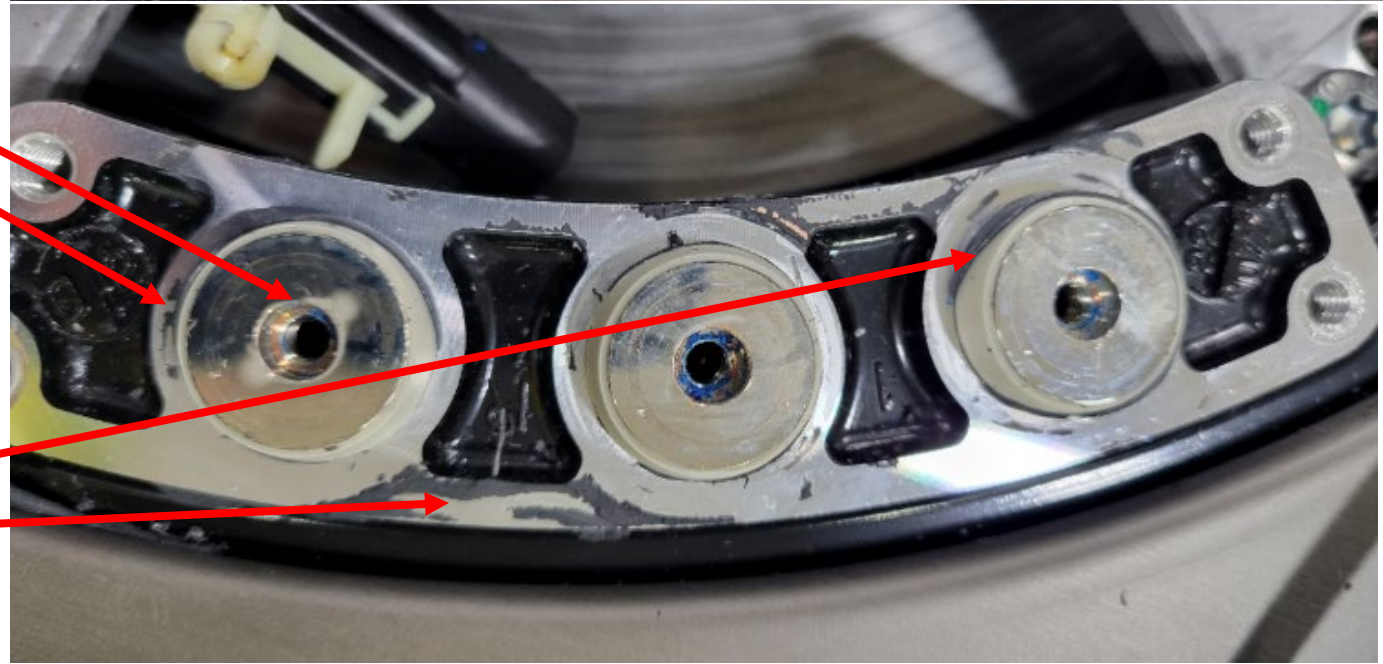
Make sure no o-rings left over.
Remove excessive Loctite.

Brass brush Dremel tool, or
manual brass brush can be
used. Do not scratch the
mushroom heads or o-ring
sealing surfaces.

Make sure the mushroom head
surface is **totally** clean of
Loctite.

Make sure o-ring mating surface
is **mostly** clean of Loctite.

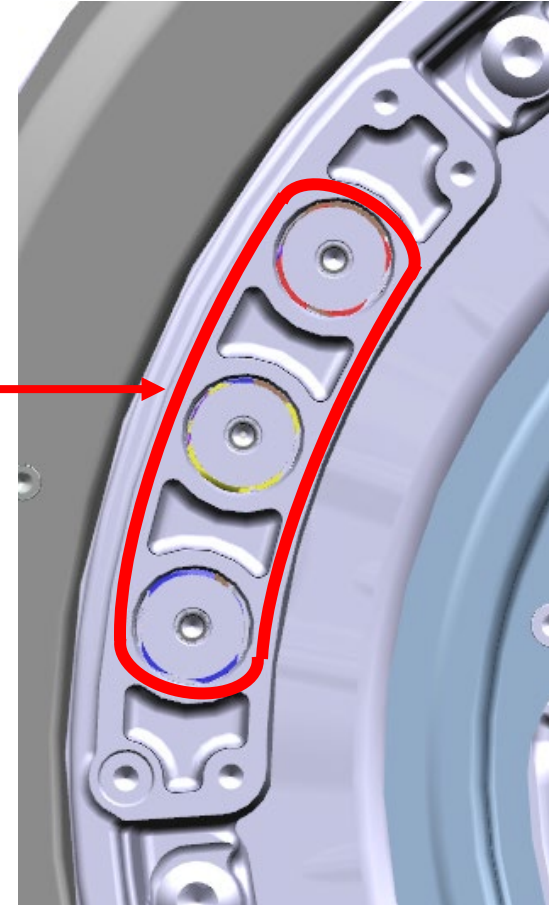
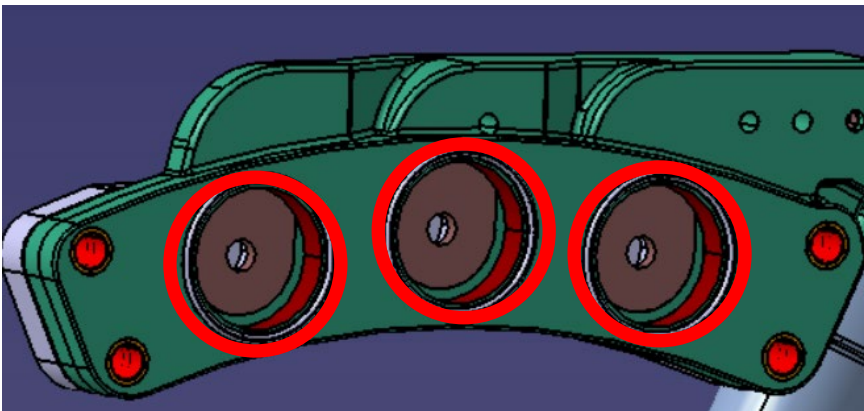
The sides of the
mushroomheads and areas
outside of the o-ring mating
area are less critical and can
have a low amount of residual
Loctite.



Instructions of Liquid Gasket

ABJA-077-AA Liquid Gasket Loctite SI 5900 (mfg p/n: 40478) used as a secondary seal for water intrusion.

1. Clean surface, including top of mushroom, with Isopropanol and let dry.
2. Apply 2-3 mm bead as shown in red.
**Caution: No Liquid Gasket on top of mushroom
Any excess liquid gasket remove with Isopropanol**
3. Continue assembly of harness onto Hub Motor, until cover is ready to be installed.

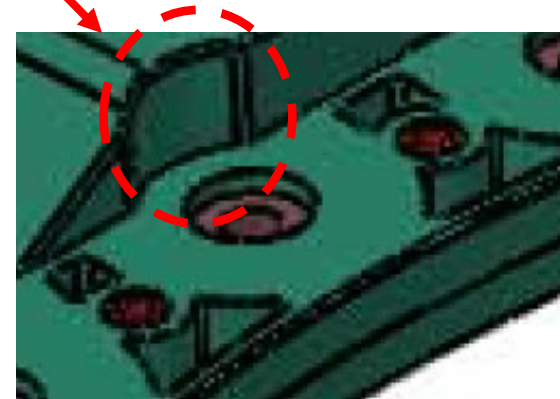
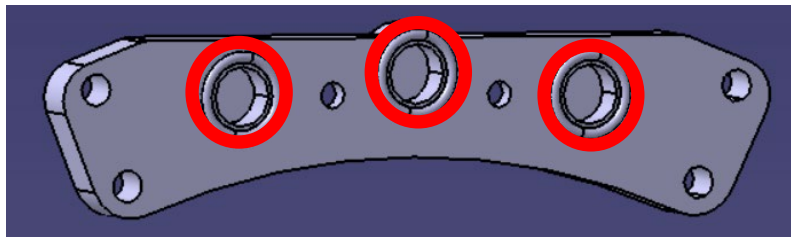
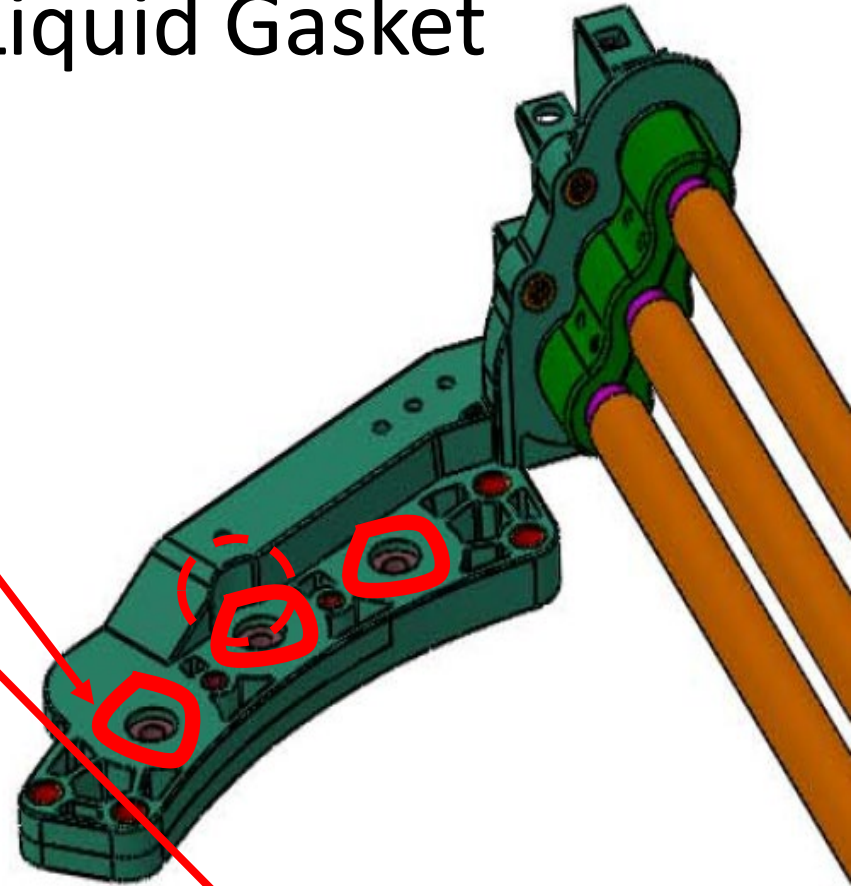
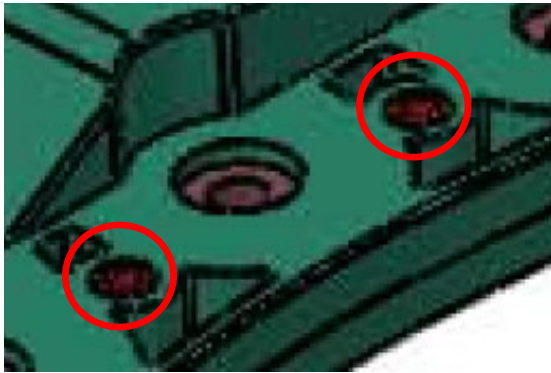


On a vertical install, Loctite can be added to the busbar instead of the motor.

Instructions of Liquid Gasket

4. Clean surface of Bus bar Cover (orange cap side) with Isopropanol and let dry.
5. Apply 2-3 mm bead as shown in red.
Caution: Liquid Gasket must not cover 2 fastener holes
6. Add extra Liquid Gasket to back of middle phase

Caution: Liquid Gasket must not cover 2 fastner holes.

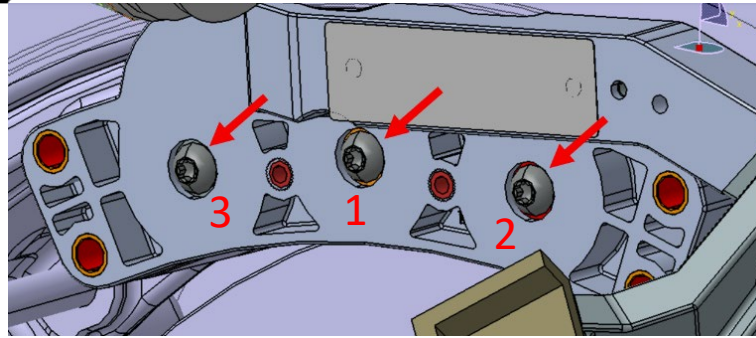


On a vertical install, Loctite can be added to the cover instead of busbar.

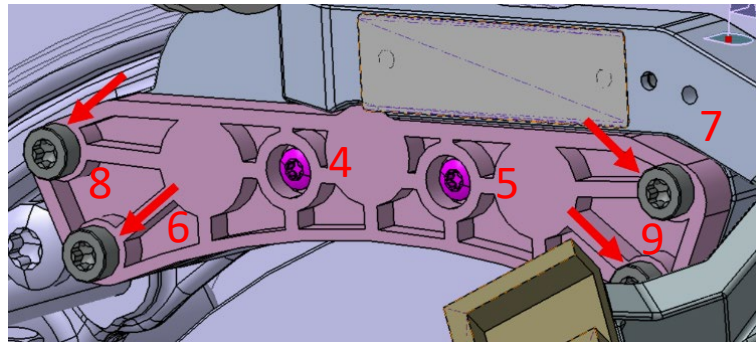
Fasteners

Torque Sequence numbers in red for busbar install. If there is not an adhesive patch, use Loctite 242.

ABBB-119-AA
M5x.8x14 screw
ABBE-023-AA
5x9x.6 Belleville washer
Dynamic = 7 +/-1 Nm
Static = 6 +/-2 Nm

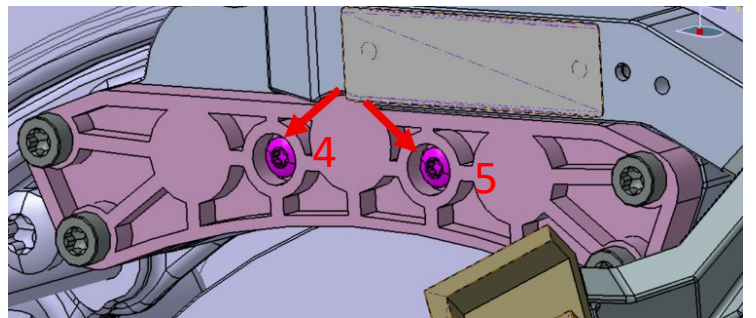
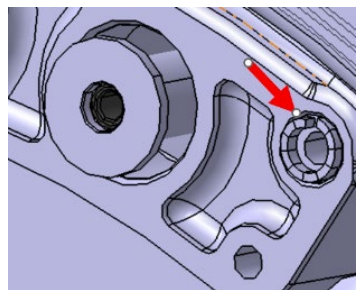


ABBB-120-AA
M6x1.0x30 screw
ABBE-024-AA washer
6x9.5x.7 Belleville washer
Dynamic = 11 +/-1 Nm
Static = 10 +/-2 Nm

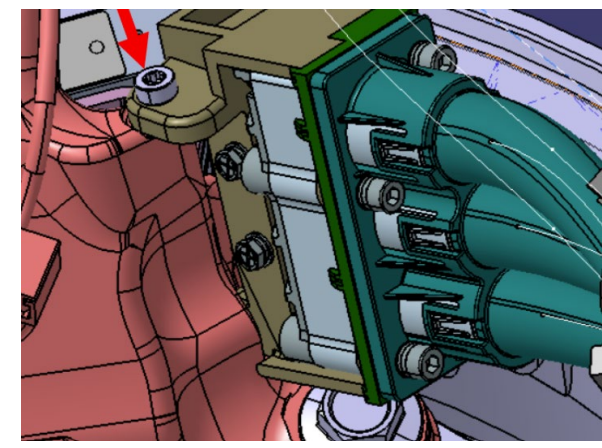


ABBE-035-AA
6.6x9.22x1.98 split washer

Dynamic = 3.5 +/-0.3 Nm
Static = 3 +/-1 Nm

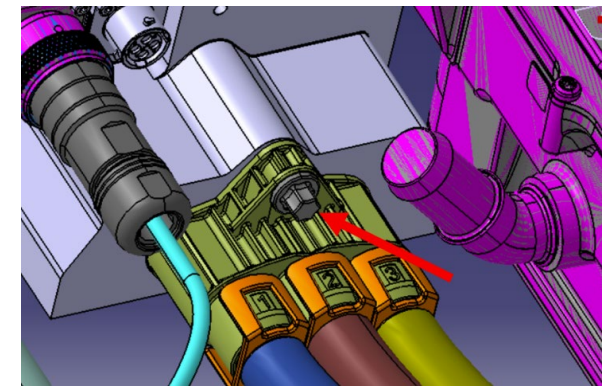


ABBB-012-AA screw
M6x1.0x20 screw
ABBE-024-AA washer
6x9.5x.7 Belleville washer
Dynamic = 11 +/-1 Nm
Static = 10 +/-2 Nm



Inverter Connector

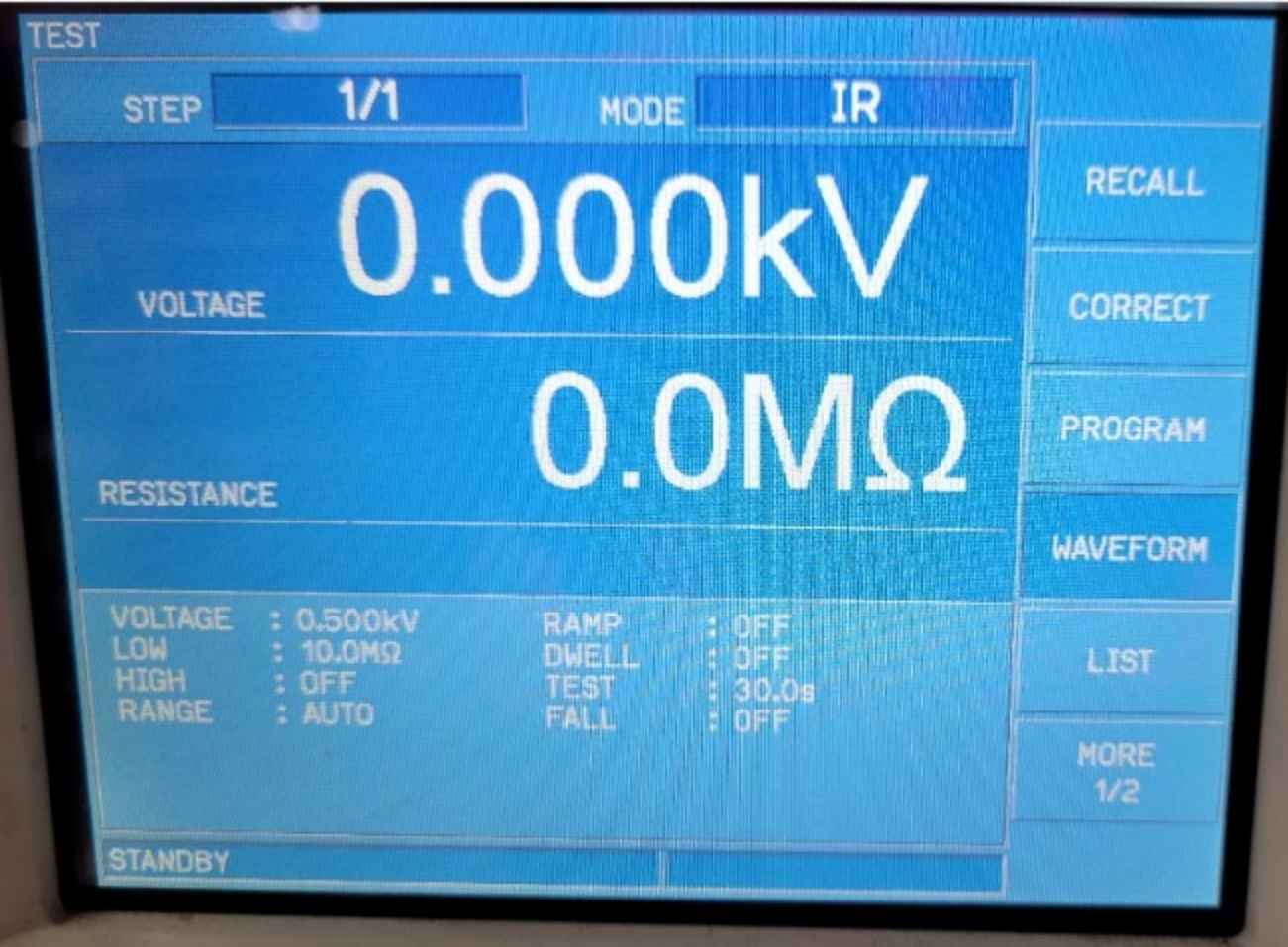
Dynamic = 9 +/-1 Nm
Static = 8 +/-2 Nm



ABBB-150-AA
M6x1.0x23 screw
ABBD-103-AA
M6x1.0x3.4 U nut
Dynamic = 6 +/-1 Nm
Static = 4.25 +/-0.5 Nm



Insulation resistance test performed at 500V
Pass at >10M ohm.



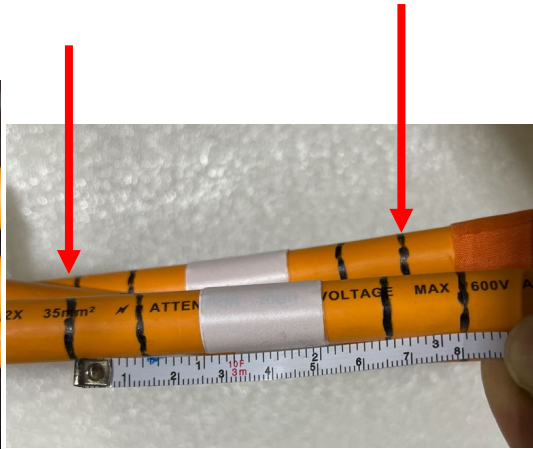
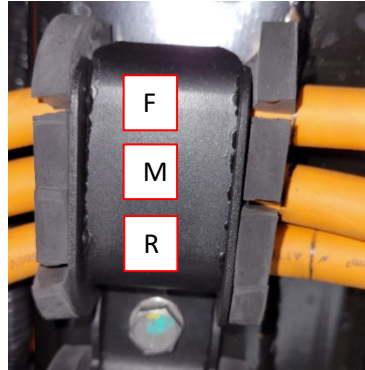
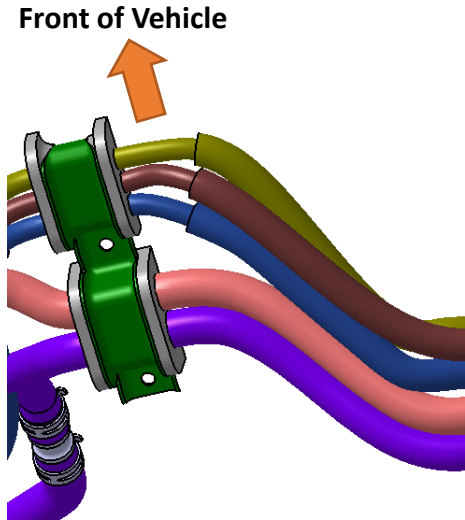
Phase to phase resistance.

Reference value approximately between 97mohms and 89.5mohms

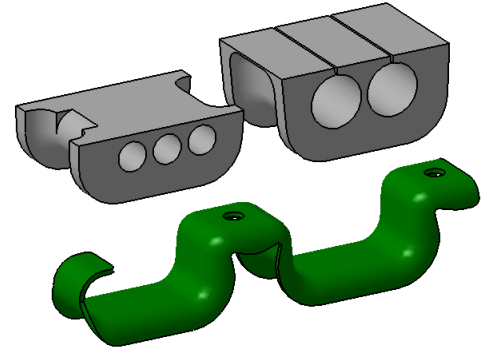
Record value



Grommet Placement



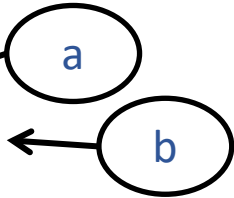
1. Install cables F in the forward location, M in the middle location, and R in the rear location.
2. Installation target is the middle lines, but the tolerance is the outer lines. As long as the outer lines are visible, the placement is good.



b) Make Sure that the length for the thermal lines is as shown below.

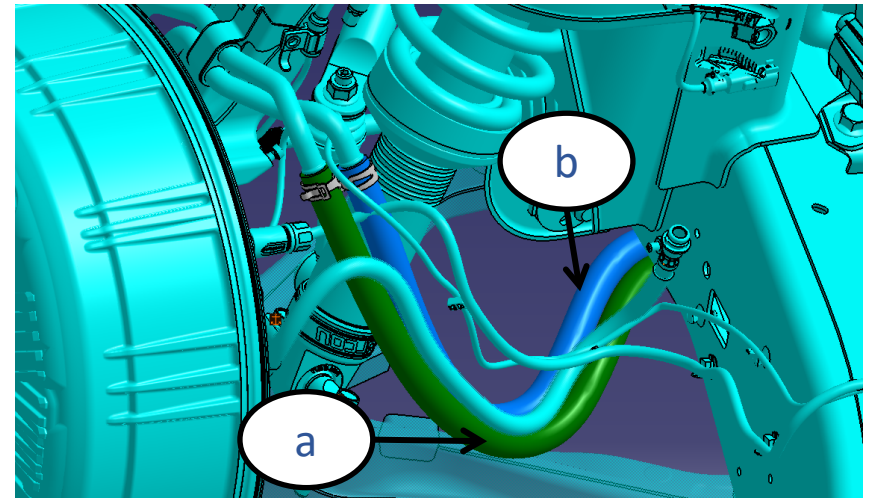
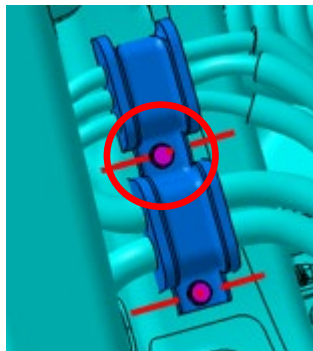
Top/Inlet : 450 mm +/- 20

Bottom / outlet : 430 mm +/- 20



Measure from hard aluminum line and soft rubber attachment point to start of bracket.

- ALFG-078-AA bracket
- ALFG-079-AA grommet
- ALFG-080-AA grommet
- ABBC-133-AA screw
- Dynamic = 25 +/- 2.5 Nm
- Static = 22.5 +/- 2.2 Nm



Proper routing:

- Three distinct groups
 - ACHV cables
 - Coolant lines
 - Everything else
- Position sensor cable needs to go over the coolant lines

