

UN R26 (external projections)

Comments to document GRSG/2019/11

Current production radius analysis



1. The following slides show existing wiper designs (not exhaustive) of different OEM's that are not able to meet the proposed amendment (see next slide) by France
2. The table below shows the affected number of vehicles on an annual basis if the proposed amendment would be introduced as an amendment to UN R26

Company	example	vehicles affected annually (million)
A	Design A	0.71
B	Design B	2.76
C	Design C	0.70
D	Design D	0.70
E	Design E	1.80
F	Design F	2.50
G	Design G1,2,3	2.30
H	Design H1, H2	4.00
I	Similar to Design E	0.60
Total		16.07



I. Proposal (France)

Paragraphs 6.4. to 6.4.2., amend to read:

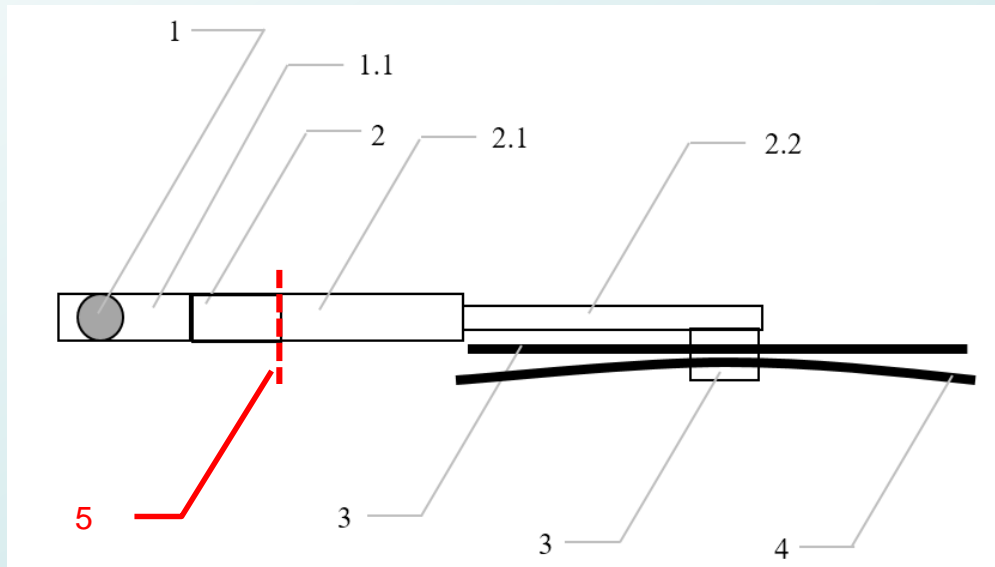
"6.4. Windscreen wipers

6.4.1. The windscreen wiper fittings shall be such that the wiper shaft (**number 1 in Figure 0**) is furnished with a protective casing (**number 1.1 in Figure 0**) which has a radius of curvature meeting the requirements of paragraph 5.4. above and an end surface area of not less than 150 mm². **The holder (head, ~~main and/or other parts~~, i.e. numbers 2, ~~2.1 and 2.2~~ in Figure 0) are designed with a radius of curvature meeting the requirements of paragraph 5.4. above.** In the case of rounded covers, these shall have a minimum projected area of 150 mm² when measured not more than 6.5 mm from the point projecting furthest. These requirements shall also be met by rear window wipers and headlamp wipers.

6.4.2. Paragraph 5.4. shall not apply to the wiper blades (**number 4 in Figure 0**), ~~or to any~~ supporting members (**number 3, 2.2, 2.1 in Figure 0**) **or to the functional hinge between the holder head and the holder (number 5 in figure 0).** However, these units shall be so made as to have no sharp angles or pointed or cutting parts.

Figure 0
Example of parts distribution

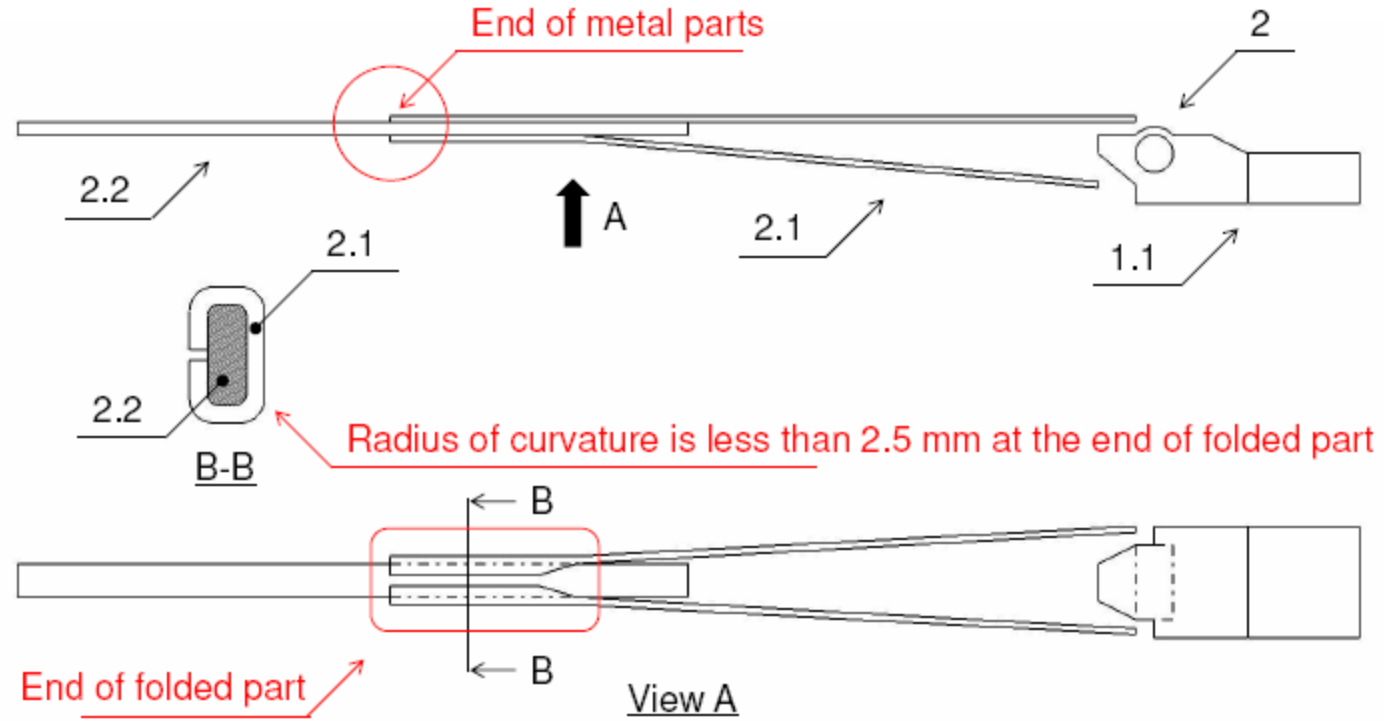
- 1 – Wiper shaft
- 1.1 – Protective casing
- 2 – Holder head
- 2.1 – Main holder
- 2.2 – Second holder
- 3 – Supporting members
- 4 – Wiper blades
- 5 – functional hinge"



1. Red text is added to the French proposal by OICA as to overcome the problems with current wiper designs
2. The examples in the next slides show that part 2.1, part 2.2 and the functional hinge of current wiper designs do not meet the requirement of par. 5.4
3. Red text is added to the drawing by OICA to clarify the hinge location.



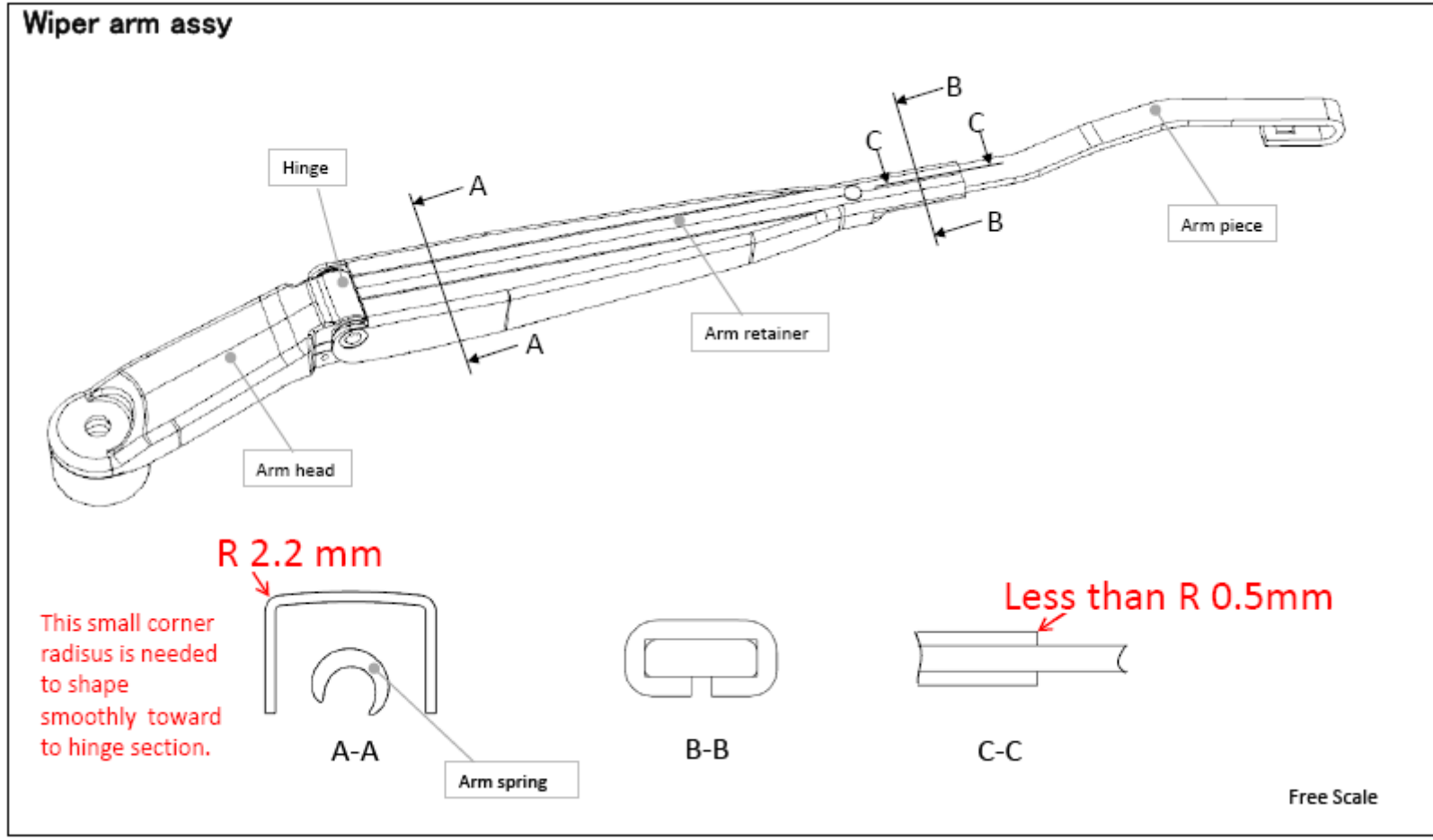
Design A



Since the subject part of paragraph 2.1 is made of metal with thickness of approx. 1.6 mm, it is impossible to secure radius of curvature at its end. It holds the subject part of para. 2.2. Significant design change is required to secure radius of curvature 2.5 mm at its folded part.



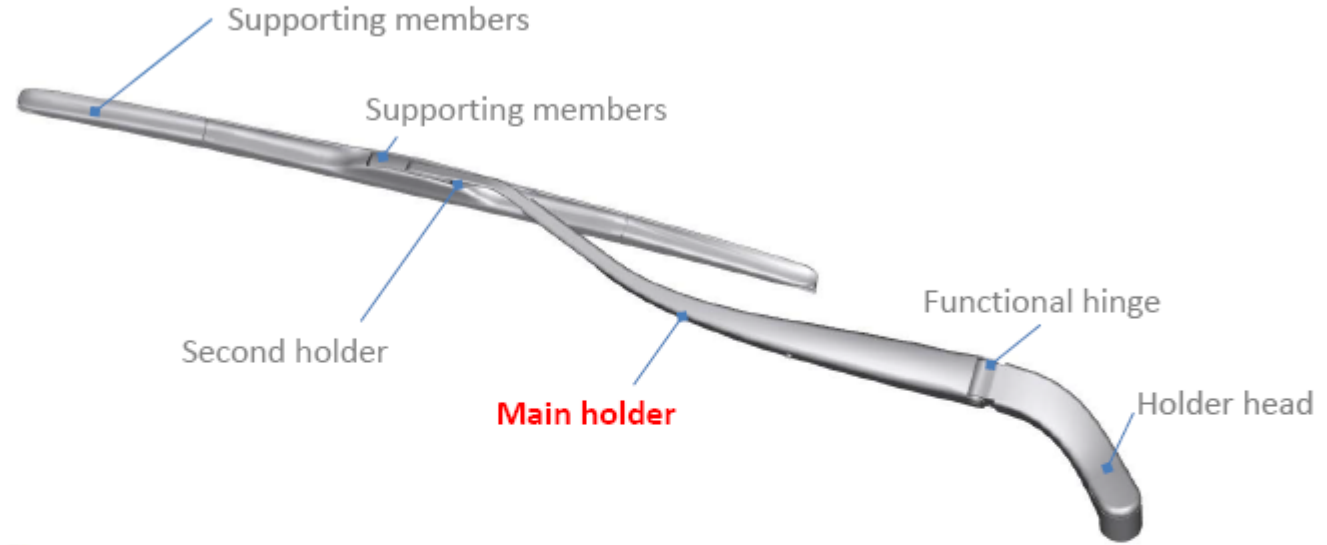
design B



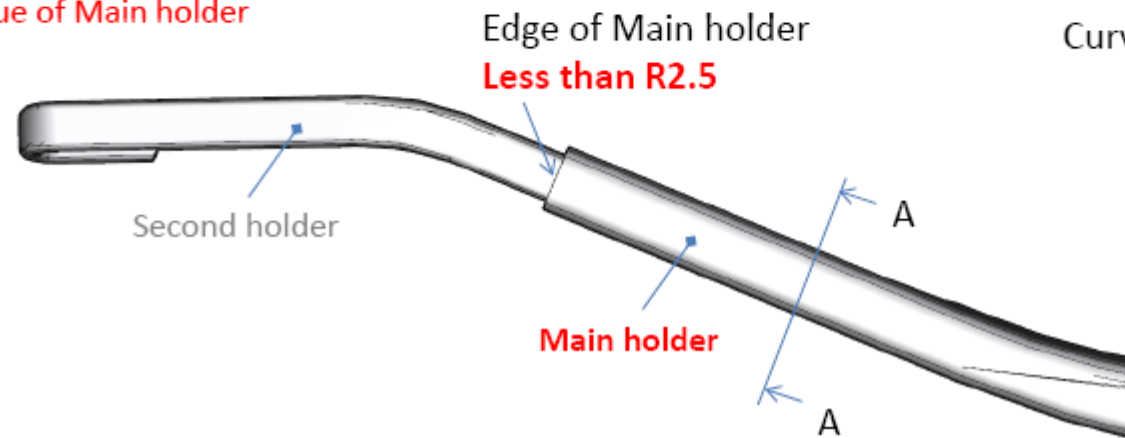


design C

ARM&BLADE ASSY



Issue of Main holder



Curvature of Main holder

Less than R2.5

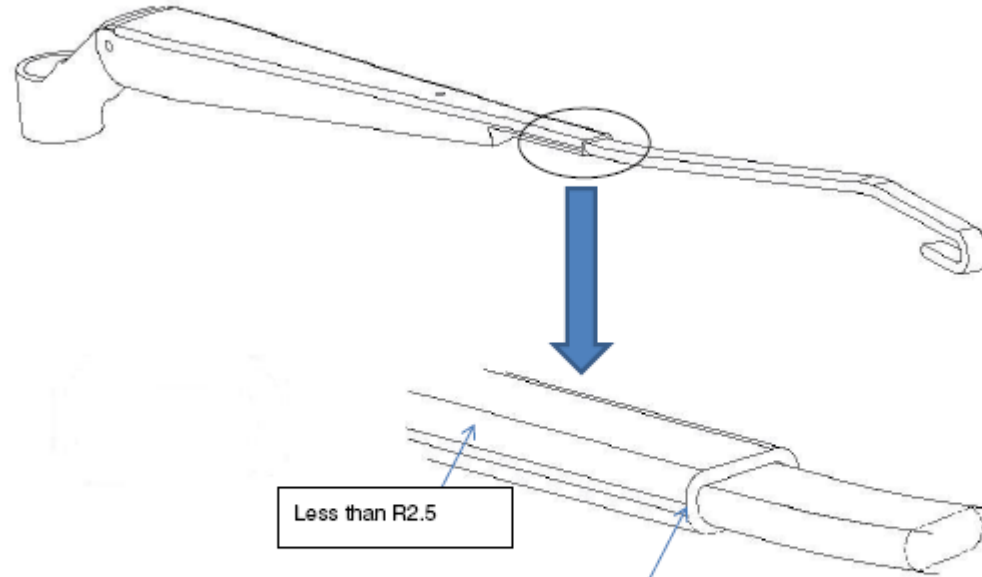


The curvature changes gradually towards Functional hinge.



design D

Wiper arm



Less than R2.5

Less than R2.5

It's extremely difficult to meet R2.5 requirement for this part.

High possibility that 5.4 in UN R26 "This requirement shall not apply to parts of the external surface which protrude less than 5 mm" doesn't apply to this part



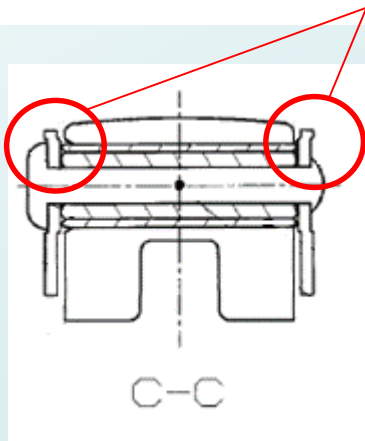
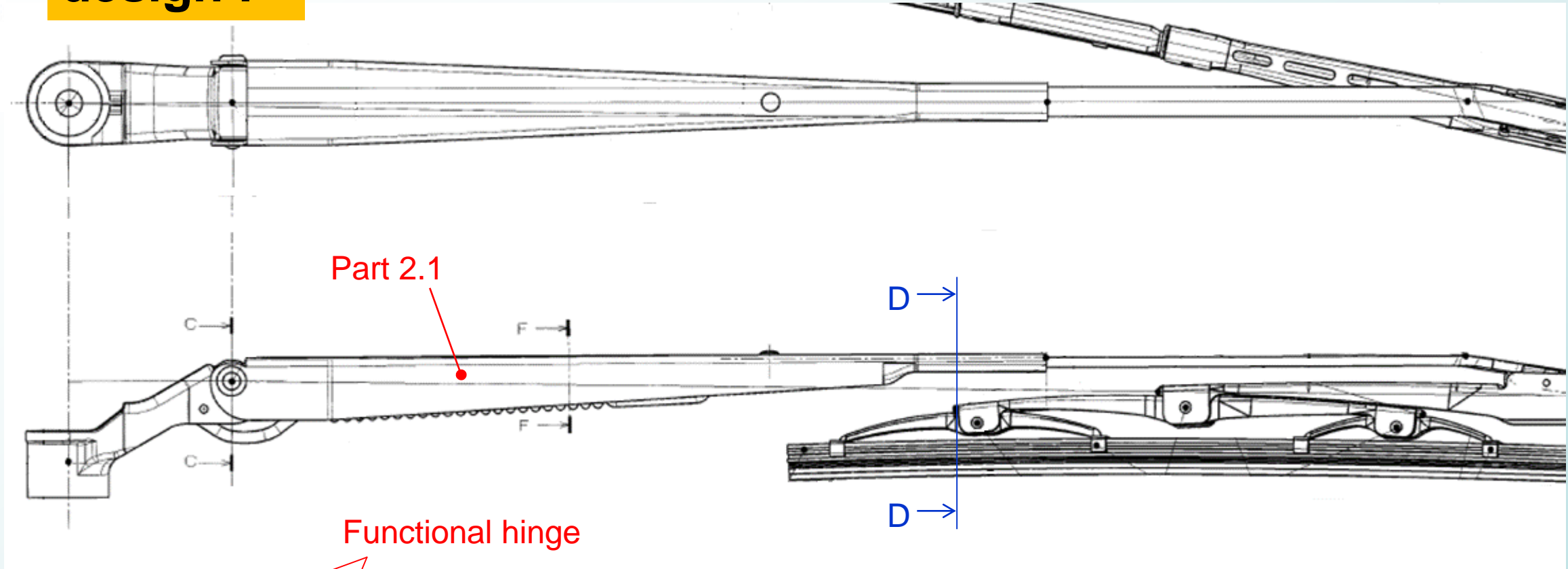
design E

Wiper arm assy

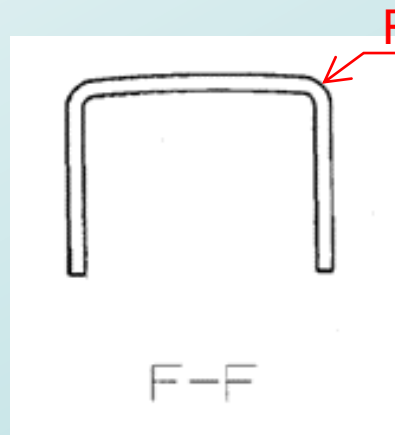




design F

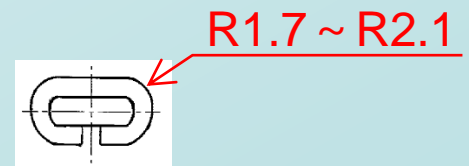


C-C



F-F

R2.1 ~ R4



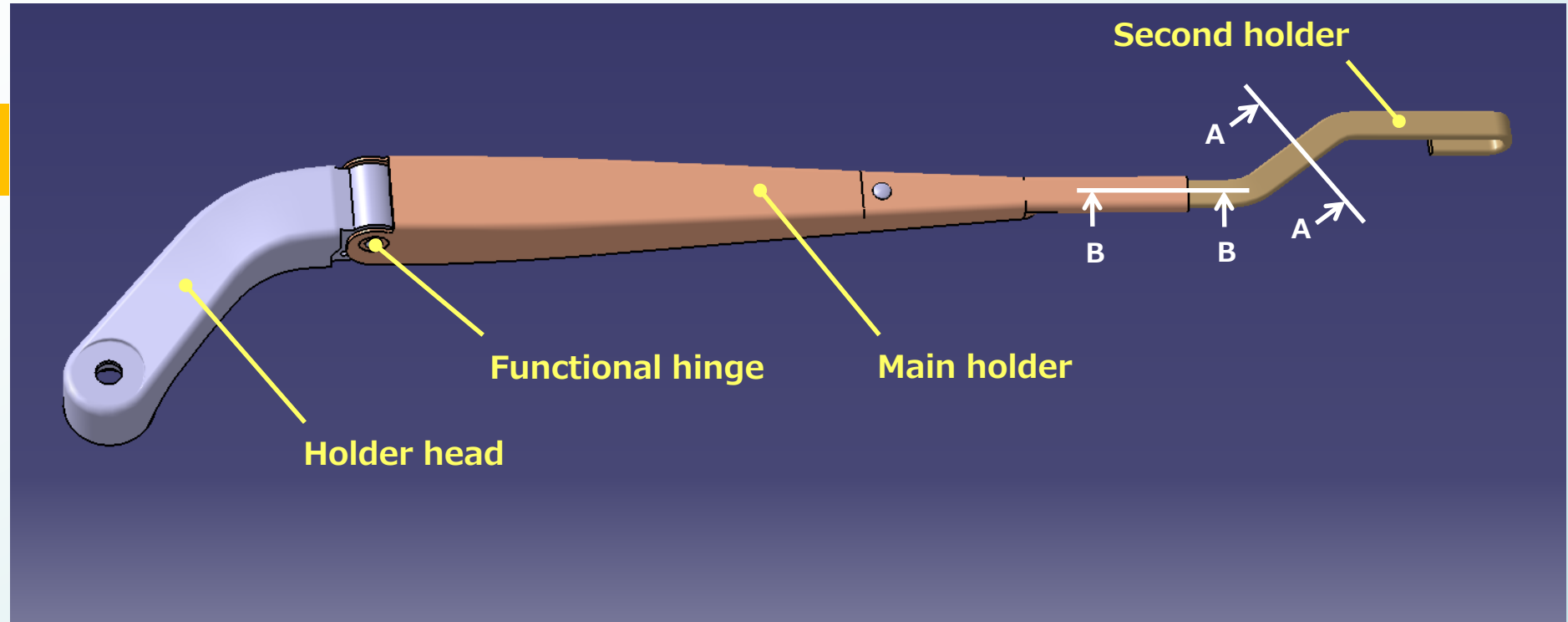
D-D

R1.7 ~ R2.1



Front wiper arm assy

design G1

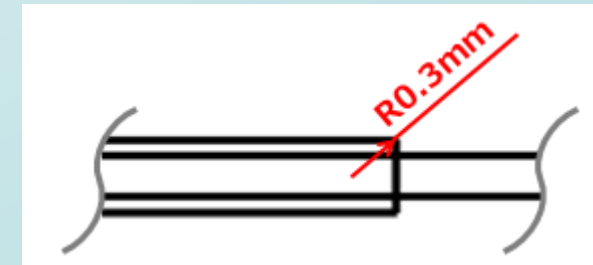


Curvature of second holder
less than R2.5mm



SEC A-A

Edge of main holder
less than R2.5mm

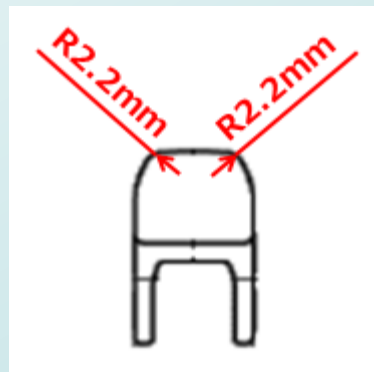
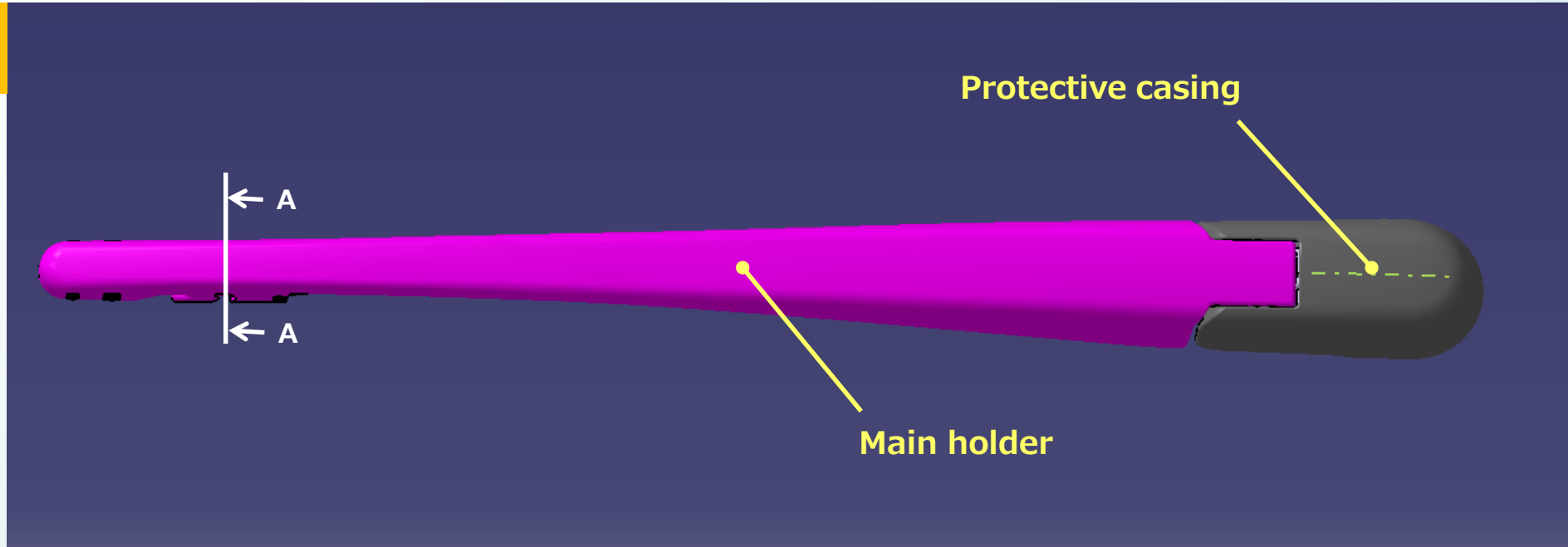


SEC B-B



Rear wiper arm assy #1

design G2



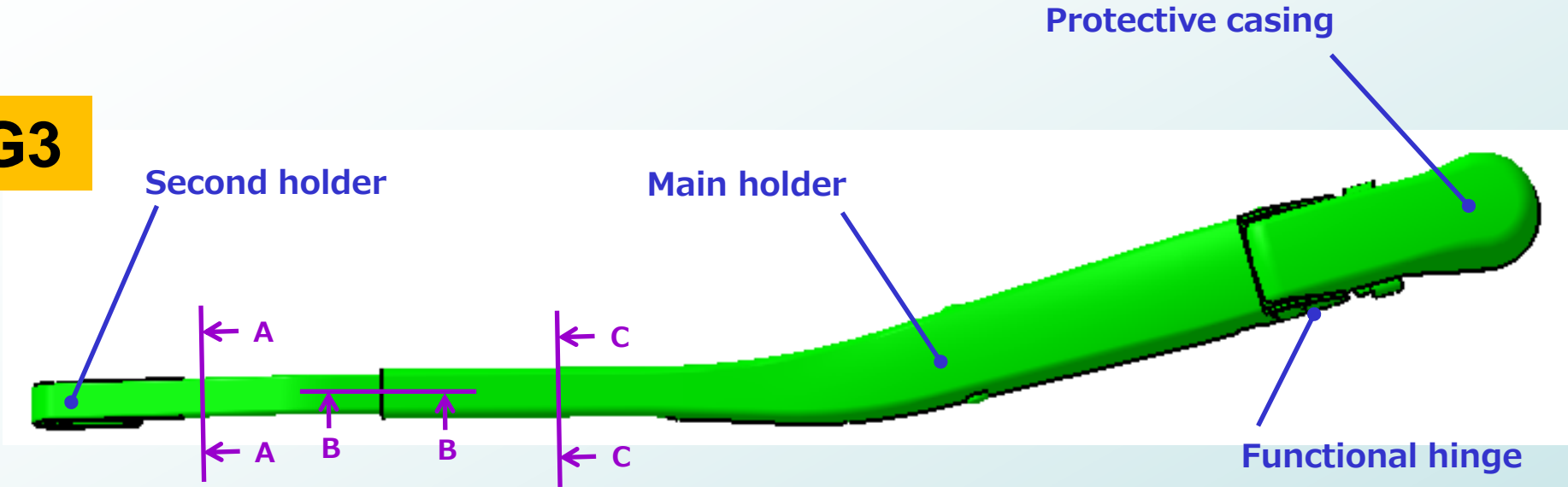
SEC A-A

Curvature of main holder
less than R2.5mm



Rear wiper arm assy #2

design G3



Curvature of second holder less than R2.5mm

SEC A-A

Edge of main holder less than R2.5mm

SEC B-B

Curvature of main holder less than R2.5mm

SEC C-C



design H1

Cutting areas
Less than R2,5

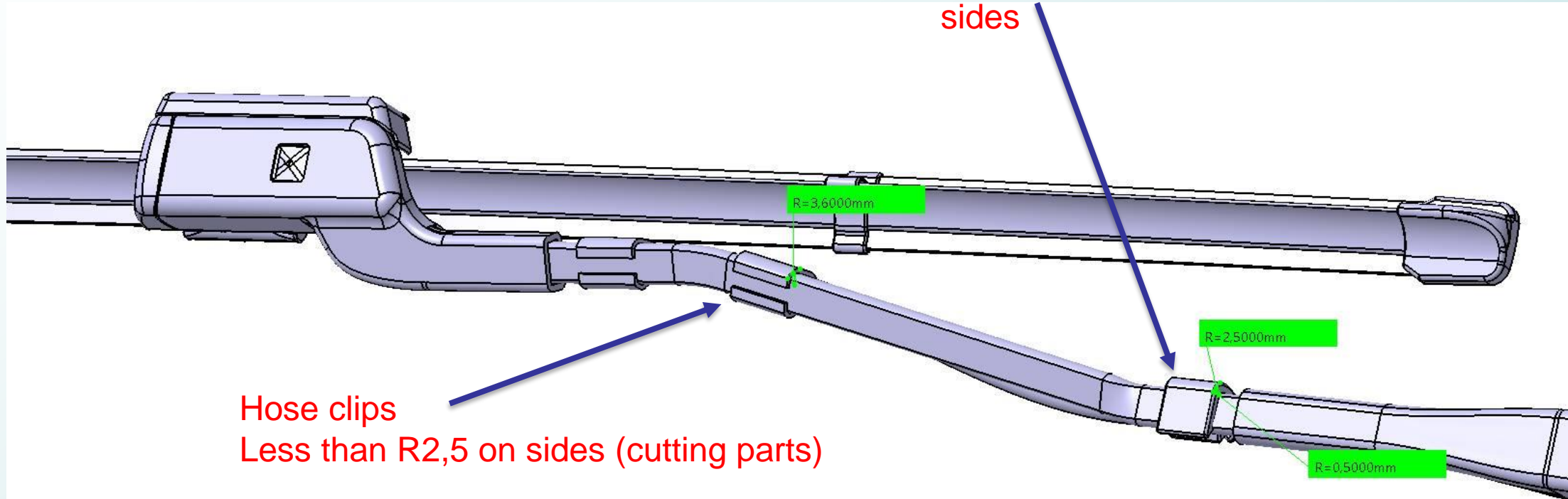




design H2

Wiper arm with embedded washing

Nozzle
Less than R2,5 on
sides



Hose clips
Less than R2,5 on sides (cutting parts)