

# Visit Report

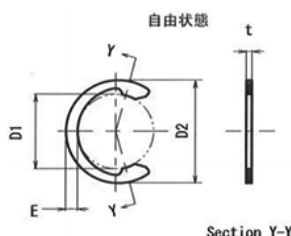
To : MIHI, FUJT  
Cc : FNM, CAAG, GUOS, LIAW, LINR, XUEA, LAIC, GUOC, ZHAI, YATE, MORT, OZAN, ENMA, SASN, SAAM

From : FUJT

Date of visit: 04 Jul. 2023  
Date of report: 07 Jul. 2023

## Sugatsune Kogyo

Participants : Sugatsune Kogyo : Mr. Kazuaki Kashiwaguma (*Deputy GM, R&D*)  
Mr. Harunobu Kubota (*Manager, Chiba Factory*)  
EMS : H. Mifune, T. Fujii  
OEM : House makers  
Sales responsible : MIHI  
Distributor : not determined  
Location : Chiba, Japan  
Application : C-Type Retaining Ring for Furniture  
Segment Code : 430  
Project number : not yet  
Material : Grivory GV-5H  
USP : High strength, High creep resistance, Good surface condition  
Potential : no information  
SOP : no information



### 1. Target of visit

To discuss molding trial results  
To discuss parts which can be replaced with EMS material

### 2. Summary

- The application was found as a type retaining ring to fix a shaft part. Sugatsune has developed the parts with Leona 90G50. Sugatsune tried GV-5H because they were interested in it at a tech day in February.
- GV-5H samples showed similar level of surface condition and 20% better results in water absorption test and creep test than Leona 90G50.

### 3. Details

#### Customer & Project information

- A tech day was held at Sugatsune Tokyo head office on 28<sup>th</sup> of Feb 2023. Sugatsune Chiba R&D attended it via online meeting. After the techday, Mr. Kashiwaguma in R&D asked EMS to provide material for injection molding trial. GV-5H was recommended and molding condition etc. was explained in an online meeting.
- Sugatsune showed samples from the molding trial at the meeting this time. The parts are different from the picture in page 1 (Sugatsune didn't allowed to take picture because the

parts are under development). They are 2 C-type retaining rings and the shaft is sandwiched between the rings and fixed. Sugatsune said that steel may give damage to the shaft because it's too hard. They had considered brass, but they decided to use plastic resin because of cost.

- Sugatsune has developed the parts with Asahi Kasei Leona 90G50. But they tried GV-5H also because they were interested in it at the Tech day. The surface condition of GV-5H parts was similar level to Leona. They performed a creep test and a water absorption test with GV-5H samples. GV-5H showed 20% better results than Leona in the 2 tests. EMS recommended that they would use GV-5H for the parts because the creep property is very important for fixation of the shaft and higher creep resistance at water absorption condition may be important. Sugatsune will offer a quotation of GV-5H after the meeting.
- Sugatsune said that there are several procedures to approve a new material in the company. But if the new material get the approval, it become a material option for many development target. So, getting the approval is very important. Sugatsune said that there are many items which they want to replace with resin because of cost saving.
- EMS offered them to hold a tech day for Chiba R&D and production. They are interested in presentations about comparison with PA66, PPS etc. and success cases for parts in tough usage environment.

#### **Part & Test Requirement**

- Good surface condition, similar level to Leona 90G50
- High creep resistance
- Good performance after water absorption

#### **4. Actions**

No.	Action	Resp.	Due date
1	Submission of quotation of GV-5H	MIHI	20 Jul. 2023
2	Submission of material data if requested	FUJT	31 Aug. 2023
3	Injection molding support	FUJT	30 Sep. 2023

#### **5. Attachments**

No attachment

Best regards,

Takamasa Fujii