

FINEHOPE

FREE

DMF/ A report

3D Design

Mould

Product Inspection Standard Setting

Free Product Inspection Standard Setting: In addition to the usual quantification of product physical properties and appearance standards, we will add REACH, RoHS, FDA, CA-65, or CFC Free to the standards according to customer needs.

Free Mould Opening: Large order quantity with mould cost free.

Free 3D Design: Finehope help customer design the desired product or modify the design for free.

Free DFM/A Report: Finehope will show details and solutions of manufacturability and assemblability through PPT to help customers reduce trouble.

Finehope

This product is customized for the customer, not for sale







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□□□□□□□431x429x238mm

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□□□□□□□

□□□150-200kg/m3

□□□□100 □

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□□□RoHS□REACH□EN71-3□CA65



Finehope 2003 ISO 9001

IATF 16949

PU Finehope 2021 IATF 16949 50
 2007 Finehope Finehope
 SPC MSA FMEA APQP PPAP

Our Advantages



PU
 PU 2002 Finehope PU
 Finehope
 PU

Finehope PU
 Finehope
 Finehope 500

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7) Finehope□□□□□□□□□□□□□□□□□□□□□□□□

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1□□□□□□□□□□□□APQP□□

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About us





Quality Assurance



UNIVERSAL TESTING MACHINE(UTM)



Tensile Test



Tear Resistance Test



Compressive Strength



Indentation Force Deflection

INSPECTION STANDARD

MATERIAL PERFORMANCE TEST REPORT

Finehope
Test Report No. 00201405201 Date: 20140520 Page 1/4
 Customer: CUSTOMER SERVICE DEPARTMENT

The following samples were submitted and identified by/on behalf of the client as:

Sample Description: UHMW and MHD (underdevelopment)
 Material No.: 1
 Other info.: 1
 Sample Processing Date: 20140514
 Working Process: 20140520

Test Method

- 101 ASTM D2014-2011 Test of Density, Test Agency
- 102 ASTM D2014-2011 Test of Density, Test Agency
- 103 ASTM D2014-2011 Test of Density, Test Agency
- 104 ASTM D2014-2011 Test of Density, Test Agency
- 105 ASTM D2014-2011 Test of Density, Test Agency
- 106 ASTM D2014-2011 Test of Density, Test Agency
- 107 ASTM D2014-2011 Test of Density, Test Agency
- 108 ASTM D2014-2011 Test of Density, Test Agency
- 109 ASTM D2014-2011 Test of Density, Test Agency
- 110 ASTM D2014-2011 Test of Density, Test Agency
- 111 ASTM D2014-2011 Test of Density, Test Agency
- 112 ASTM D2014-2011 Test of Density, Test Agency
- 113 ASTM D2014-2011 Test of Density, Test Agency
- 114 ASTM D2014-2011 Test of Density, Test Agency
- 115 ASTM D2014-2011 Test of Density, Test Agency
- 116 ASTM D2014-2011 Test of Density, Test Agency
- 117 ASTM D2014-2011 Test of Density, Test Agency
- 118 ASTM D2014-2011 Test of Density, Test Agency
- 119 ASTM D2014-2011 Test of Density, Test Agency
- 120 ASTM D2014-2011 Test of Density, Test Agency

Finehope
Test Report No. 00201405201 Date: 20140520 Page 2/4
 Customer: CUSTOMER SERVICE DEPARTMENT

Test Result

| No. | Test Item | Unit | Test Standard | Customer Sample group | | | Customer Sample Unit | | |
|-----|------------|-------------------|---------------|-----------------------|------|------|----------------------|------|------|
| | | | | 1 | 2 | 3 | 1 | 2 | 3 |
| 1 | Density | g/cm ³ | ASTM D2014 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| 2 | Hardness | HR | ASTM D2014 | 80 | 80 | 80 | 80 | 80 | 80 |
| 3 | Strength | MPa | ASTM D2014 | 10 | 10 | 10 | 10 | 10 | 10 |
| 4 | Impact | J/m ² | ASTM D2014 | 10 | 10 | 10 | 10 | 10 | 10 |
| 5 | Modulus | GPa | ASTM D2014 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 6 | Creep | % | ASTM D2014 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 7 | Relaxation | % | ASTM D2014 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

FIG.
 1. In order to make the strength of two steel rods can be compared, set of the test specimen in the same direction about three and four rods in one side to do the tensile strength test comparison.
 2. For the specific grade value in the above test result, it is the value of specimen with size in one side, and the actual value of the whole sample.

Finehope
Test Report No. 00201405201 Date: 20140520 Page 3/4
 Customer: CUSTOMER SERVICE DEPARTMENT

Sketch Picture

1. This picture is only used with the Serial Report from Finehope.

| | |
|-----------------|--|
| Customer | |
| Location | New Zealand |
| Customer Code | G1019 |
| Risk Assessment | |
| New: | Site <input type="checkbox"/> Technology <input type="checkbox"/> Process <input type="checkbox"/> |
| Other Risks | <input type="checkbox"/> |

| | |
|-------------------|------------|
| Project | |
| Finehope Contact | Wendy Yang |
| Part No. | |
| Part Name | G1019Y04 |
| Change Level/Date | |
| User Plant(s) | Finehope |

| Core Team Members | Company/Title | Phone/Fax/E-Mail |
|-------------------|-----------------|--|
| Tiger Xu | G.M. | |
| Yubin Lim | Vice G.M. | |
| Cindy Wu | Sales Manager | cindy@finehope.com |
| Liangquan Wan | Project Manager | |
| Wendy Yang | Sales | wendy@finehope.com |

| Build Level | Material Required Date | Quantity | No. Concurrent | |
|--------------------------------|------------------------|----------|----------------|--------|
| | | | SRCs | Majors |
| Product Design and Development | 21-Jun-21 | 10 | | |
| Product and Process Validation | 25-Jun-21 | 15 | | |

| APQP Deliverable | Finehope APQP Reference Only | G Y R | Project Need Date | Supplier Timing Date | Actual Closure Date | Supplier Lead Resp Inits | Finehope Acceptance Complete | Remarks or Assistance Required |
|--|------------------------------|-------------|-------------------|----------------------|---------------------|--------------------------|------------------------------|--------------------------------|
| | | | | | | | | |
| 1. Project Timeline (Synchronized w/Production Time Plan) | 2030 | G | 20-Jun-21 | 21-Jun-21 | 21-Jun-21 | 22-Jun-21 | 23-Jun-21 | / |
| 2. Customer Inputs / Requirements | 2030 | G | 23-Jun-21 | 24-Jun-21 | 24-Jun-21 | 25-Jun-21 | 26-Jun-21 | / |
| 3. Warranty & Quality Mitigation Plan | 2030 | G | 24-Jun-21 | 25-Jun-21 | 25-Jun-21 | 26-Jun-21 | 27-Jun-21 | / |
| 4. Customer Specific Requirements | 2030 | G | 25-Jun-21 | 26-Jun-21 | 26-Jun-21 | 27-Jun-21 | 28-Jun-21 | / |
| 5. Design FMEA | 2080 | G | 26-Jun-21 | 27-Jun-21 | 27-Jun-21 | 28-Jun-21 | 29-Jun-21 | / |
| 6. Preliminary Bill of Materials (BOM) | 2030 | G | 27-Jun-21 | 28-Jun-21 | 28-Jun-21 | 29-Jun-21 | 30-Jun-21 | / |
| 7. Prototype Control Plans | 2110 | G | 28-Jun-21 | 29-Jun-21 | 29-Jun-21 | 30-Jun-21 | 1-Jul-21 | / |
| 8. Prototype Builds | 2110 | G | 29-Jun-21 | 30-Jun-21 | 30-Jun-21 | 1-Jul-21 | 2-Jul-21 | / |
| 9. Design Verification Plan & Report (DVP&R) | 2120 | G | 30-Jun-21 | 1-Jul-21 | 1-Jul-21 | 2-Jul-21 | 3-Jul-21 | / |
| 10. Design / Process Review | 2130 | G | 1-Jul-21 | 2-Jul-21 | 2-Jul-21 | 3-Jul-21 | 4-Jul-21 | / |
| 11. Team Feasibility Commitment | 2130 | G | 2-Jul-21 | 3-Jul-21 | 3-Jul-21 | 4-Jul-21 | 5-Jul-21 | / |
| 12. APQP Status Sub-Supplier | 2130 | G | 3-Jul-21 | 4-Jul-21 | 4-Jul-21 | 5-Jul-21 | 6-Jul-21 | / |
| 13. Production Drawing & Specifications | 2220 | G | 4-Jul-21 | 5-Jul-21 | 5-Jul-21 | 6-Jul-21 | 7-Jul-21 | / |
| 14. Subcontractor Purchase Orders (Customer Tooling) | 2220 | G | 5-Jul-21 | 6-Jul-21 | 6-Jul-21 | 7-Jul-21 | 8-Jul-21 | / |
| 15. Facilities, Equipment, Tools and Gages | 2260 | G | 6-Jul-21 | 7-Jul-21 | 7-Jul-21 | 8-Jul-21 | 9-Jul-21 | / |
| AIAG APQP Phase 3 - Process Design and Development | | | | | | | | |
| 16. Product/Process and Quality System Review | 3030 | G | 9-Jul-21 | 10-Jul-21 | 10-Jul-21 | 10-Jul-21 | 11-Jul-21 | / |
| 17. Manufacturing Process Flow Chart | 3040 | G | 11-Jul-21 | 12-Jul-21 | 12-Jul-21 | 12-Jul-21 | 13-Jul-21 | / |
| 18. Process FMEA | 3100 | G | 13-Jul-21 | 14-Jul-21 | 14-Jul-21 | 14-Jul-21 | 15-Jul-21 | / |
| 19. Pre-Launch Control Plan | 3110 | G | 15-Jul-21 | 16-Jul-21 | 16-Jul-21 | 16-Jul-21 | 17-Jul-21 | / |
| 20. Process Work Instructions | 3120 | G | 17-Jul-21 | 18-Jul-21 | 18-Jul-21 | 18-Jul-21 | 19-Jul-21 | / |
| 21. Measurement Systems Evaluation | 3130 | G | 19-Jul-21 | 20-Jul-21 | 20-Jul-21 | 20-Jul-21 | 21-Jul-21 | / |
| 22. Packaging Specifications & Approvals | 3160 | G | 21-Jul-21 | 22-Jul-21 | 22-Jul-21 | 22-Jul-21 | 23-Jul-21 | / |
| 23. Manufacturing Team Training | 3170 | G | 23-Jul-21 | 24-Jul-21 | 24-Jul-21 | 24-Jul-21 | 25-Jul-21 | / |
| AIAG APQP Phase 4 - Product and Process Validation | | | | | | | | |
| 24. Subcontractor PPAP Approval | 4005 | G | 9-Jul-21 | 10-Jul-21 | 10-Jul-21 | 10-Jul-21 | 11-Jul-21 | / |
| 25. Production Control Plan | 4008 | G | 11-Jul-21 | 12-Jul-21 | 12-Jul-21 | 12-Jul-21 | 13-Jul-21 | / |
| 26. Production Readiness Review (PRR) | 4009 | G | 13-Jul-21 | 14-Jul-21 | 14-Jul-21 | 14-Jul-21 | 15-Jul-21 | / |
| 27. Production Trial Run (PTR) | 4010 | G | 15-Jul-21 | 16-Jul-21 | 16-Jul-21 | 16-Jul-21 | 17-Jul-21 | / |
| 28. Process Capability Studies | 4030 | G | 17-Jul-21 | 18-Jul-21 | 18-Jul-21 | 18-Jul-21 | 19-Jul-21 | / |
| 29. Production Validation Plan & Report (PV&R) | 4090 | G | 19-Jul-21 | 20-Jul-21 | 20-Jul-21 | 20-Jul-21 | 21-Jul-21 | / |
| 30. Production Part Approval (PPAP) | 4110 | G | 21-Jul-21 | 22-Jul-21 | 22-Jul-21 | 22-Jul-21 | 23-Jul-21 | / |
| AIAG APQP Phase 5 - Feedback, Assessment and Corrective Action | | | | | | | | |
| 31. Initial Production Shipment | 5005 | G | 20-Jul-21 | 30-Jul-21 | 30-Jul-21 | 30-Jul-21 | 31-Jul-21 | / |
| 32. Production Ramp-up Plan | 5005 | G | 31-Jul-21 | 2-Aug-21 | 2-Aug-21 | 2-Aug-21 | 3-Aug-21 | / |
| 33. Full Production Date | 5005 | G | 5-Aug-21 | 7-Aug-21 | 7-Aug-21 | 7-Aug-21 | 8-Aug-21 | / |
| 34. Conduct Lessons Learned | 5005 | G | 8-Aug-21 | 10-Aug-21 | 10-Aug-21 | 10-Aug-21 | 11-Aug-21 | / |

Design Failure Mode and Effects Analysis (Design FMEA)

FMEA No.:
DFMEA-001

Page: page 1, totally 3 pages
Made: Xiaodong Qiu

Product Name: Injection moulding

Procedure responsible dept: Production Dept

Model year/vehicle types: CRV

Soybean Milk Maker

Important date: Nov.10th,2015

FMEA Date: Nov.10th,2015

People participated: Develop dept:GaoLin Wei

Sales:Haiyan Wu

PC:Jiannan Yan

Technology Dept:Jianyu Zhou

Purchaser:Yuanyuan Gou

Production dept:Shuwen Dong

QC:Bingxiang Zheng

| procedure function requirements | Potential failure mode | Potential effects analysis | severity (S) | grade | potential causes/mechanisms of failure | frequency (O) | Current prevention process control | Current detection process control | detection (D) | RPN | recommended measures | Responsibility and target completion date | action results | | | | |
|---------------------------------|---------------------------|----------------------------|--------------|-------|--|---------------|--|-----------------------------------|---------------|-----|---|---|---|---------------|------------------------|-----|----|
| | | | | | | | | | | | | | severity (S) | frequency (O) | difficult to check (D) | RPN | |
| scyphus | size changes of handle | handle cover fall off | 6 | A | PP size change | 6 | By adjusting the product of the injection molding process, and measure or test the clasp of product size | measure and test product size | 3 | 108 | Add the number of button bit in handle design, in order to keep the connection strength | Xiaodong Qiu 2015/08/25 | By adjusting the product of the injection molding process, and measure or test product size | 6 | 1 | 1 | 6 |
| scyphus | warpage of scyphus handle | Poor appearance break | 4 | C | high handle wall | 6 | Add the stiffener to handle wall to prevent deformation | measure and test product size | 2 | 48 | if this problem appears, make improvement by Adding the stiffener | Xiaodong Qiu 2015/09/30 | Add the stiffener to handle wall to prevent deformation | 4 | 2 | 1 | 8 |
| scyphus | Deformation of cup-mouth | Micro switch without power | 8 | A | PP material deformation, Resulting in a perpendicular direction to connect the cup and handle inward deformation, So that both sides of the 球, the micro switch column opposite sink., and | 3 | Adjust the injection molding process, to prevent extrusion | measure and test cup-mouth size | 3 | 72 | in the cup packing control the direction of the lateral dimension of no force, stipulate the way of packing | Xiaodong Qiu 2015/09/10 | stipulate the cup use egg cell methods to put the packing which do not squeeze each other | 8 | 1 | 3 | 24 |

H-R-P-001-1

Process Failure Mode and Effects Analysis (PFMEA)

潜在失效模式和后果分析

FMEA No.FMEA20150325-01

Page 3

Maint:Wenhong-Huang

Item:Welding Improvement

Process Responsibilities: Production welding group

FMEA Date (Original):2015.03.25

Model year/project

Key Dates

| Item 项目 | Potential failure mode 潜在失效模式 | Potential consequences of failure modes 失效的后果/潜在失效模式 | Severity 严重度 | Grade 等级 | Potential causes of failure 失效的潜在原因 | Occurrence degree 发生度 | Current process control and prevention 现行过程控制/预防 | Current process control detection 现行过程控制/检测 | Detection rate 检测率 | RPN | Suggest measures 建议措施 | Responsibility and target completion date 负责人及目标完成日期 | Measure results/测量结果 | | | |
|--|--|---|-----------------|-------------|---|--------------------------|---|--|-----------------------|-----|--|---|--|-----------------|-----------------------|--------------------------|
| | | | | | | | | | | | | | Measures and effective date 措施及有效日期 | Severity 严重度 | Incidence rate 发生率 | Detection degree 可检测度 |
| Request 项目 | Clamping is not in place 夹具不在位 | Welding error, leak, welding deviation, affect the assembly or use function 焊接错误、漏焊、焊接偏差、影响装配或使用功能 | 6 | B | ● Staff negligence 人员疏忽 ● Failure for bad 夹具不到位 | 4 | ● Make the operation standard book 制定作业指导书 ● Make maintenance standards, regular maintenance 制定保养标准、定期保养、维护 | ● Visual inspection 目视检测 ● Finished 100% full inspection 完成100%全检 | 6 | 144 | ● Pre-service training of staff 岗前培训 ● Regular maintenance 定期维护 | | 6 | 3 | 4 | 72 |
| Clamping (clamping required is in place, no missing or wrong loaded) 夹具不在位、无漏装、错装 | Clamping is not in place 夹具不在位 | Welding error, leak, welding deviation, affect the assembly or use function 焊接错误、漏焊、焊接偏差、影响装配或使用功能 | 8 | A | ● Staff negligence 人员疏忽 ● Failure for bad 夹具不到位 ● Failure inaccurate 夹具定位不准确 | 4 | ● Make the operation standard book 制定作业指导书 ● Make maintenance standards, regular maintenance 制定保养标准、定期保养、维护 ● Regular checking of fixture 夹具定期检查 | Visual inspection 目视检测 | 6 | 192 | ● Pre-service training of staff 岗前培训 ● Regular maintenance 定期维护 ● Make inspection checklist for fixture 制定夹具检查清单 | | 8 | 3 | 4 | 96 |
| Attachments missing 附件缺失 | Affect product strength or influence the assembly 影响产品强度或影响装配 | | 8 | A | Staff negligence 作业人员疏忽 | 3 | Make the operation standard book 制定作业指导书 | Visual inspection 目视检测 | 4 | 96 | Final inspection personnel do 100% full inspection for each bead with man 每个工人100%全检、目视 | | 8 | 2 | 2 | 32 |
| Attachment error 附件错误 | Influence assembly 影响装配 | | 7 | A | No mistake proofing fixture 夹具无防错 | 3 | Make the operation standard book 制定作业指导书 | Visual inspection 目视检测 | 6 | 126 | ● Increase the mistake proofing devices 增加防错装置 ● Inspection for final inspection tools 对终检工具检测 | | 7 | 2 | 4 | 56 |
| False welding 假焊 | Lack of strength, affect the use of function 强度不足、影响使用功能 | | 9 | A | Current, voltage, welding angle, speed setting is not reasonable 电流、电压、焊接角度、速度设置不合理 | 4 | ● Welding process guidance making 制定焊接工艺指导书 ● Condition confirmation check 加工条件确认书 ● Confirm the failure test on a regular basis 定期确认失效试验 | Destructive testing 破坏性试验 | 8 | 288 | After the procedure is set up to confirm the processing conditions, the execution and marking of the failure test is performed. 工序设置完成后确认加工条件 | | 9 | 3 | 4 | 108 |

Production Device

KRAUSS MAFFEI

Finehope has successively introduced many of the world's most advanced German KraussMaffei high-pressure injection machines since 2010.



Reaction Injection Molding (RIM) High Pressure Machine
KRAUSS MAFFEI
Made in Germany!



Self-invented fully automatic production line

Finehope has independently developed a number of fully automatic P-U injection production lines since 2010. These production lines reduce production costs and meet customer delivery requirements.



Welding Robots



Since 2016, Finehope has continued to purchase welding robots and automatic fixture turntables for welding metal parts. The independent processing of accessories saves the waiting time and procurement cost of outsourcing processing.

CNC Machine

Finehope has continued to purchase CNC equipment since 2016. CNC (Computer Numerically Controlled) machining is a manufacturing process in which pre-programmed computer software dictates the movement of factory tools and machinery. Using this type of machine versus manual machining can result in improved accuracy, increased production speeds, enhanced safety, increased efficiency and most importantly, help customers save costs and improve product quality.



Mould Release Agent Painting Robot



Since 2019, Finehope has purchased robots for spraying water-based release agents to improve the working environment, improve spraying quality and material utilization, and reduce labor costs.

3D printer

Finehope started to purchase 3D printers in 2015. 3D printing can realize rapid proofing of new product prototypes and templates for resin molds, and can also be used for faster and cheaper small batch production.



Social Responsibility

- **Audited by Sedex**

(Supplier business ethics information exchange)

Labor standard · health and safety · Environmental protection · Business ethics practice

- **Public-spirited**



Voluntary tree planting after Super Typhoon Meranti in 2016

A VALUE-BASED COMPANY

CUSTOMER FIRST

TEAMWORK

EMBRACE CHANGES

PASSION

INTEGRITY

COMMITMENT