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中国认可  
国际互认  
检测  
TESTING  
CNAS L11390

# 检测报告

## Test Report

报告编号

Report No. ROCKB202103008-1

产品名称  
Product Name

石墨填料 M800  
Graphite Packing M800

委托单位  
Customer

浙江喜鹊密封件有限公司  
Zhejiang Magpie Sealing Element Co., Ltd.

委托单位地址  
Customer's Address

浙江省温州市永嘉县瓯北街道浦一村谢宅巷9号  
No.9 Xiezhai Alley, Puyi Village, Oubei Street,  
Yongjia County, Wenzhou City, Zhejiang Province

试验起始日期  
Date Started

2021年6月3日  
June 3, 2021

试验结束日期  
Date Finished

2021年6月11日  
June 11, 2021

浙江岩石机械检测有限公司  
Zhejiang Rock Mechanical Inspection and Testing Co., Ltd.



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Company promises all commercial information, technical document or trade secret related to testing shall be protected, and all documents, samples and data shall be properly handled.

通讯地址：浙江省温州市永嘉县瓯北街道和一工业区

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## 填料低泄漏试验信息 Fugitive Emissions Test Information

|                                                                                                                              |                                                                                                                                                    |                                                            |                           |    |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------|----|
| 填料厂家<br>Manufacturer                                                                                                         | 浙江喜鹊密封件有限公司<br>Zhejiang Magpie Sealing Element Co., Ltd.                                                                                           |                                                            |                           |    |
| 填料描述<br>Description                                                                                                          | 石墨填料/2 个编织石墨圈，带金属丝加强；3 个石墨压圈<br>Graphite packing/ 2 nos. of braided graphite rings with metal-wire-reinforced, 3 nos. of die-formed graphite rings |                                                            |                           |    |
| 填料材料<br>Material                                                                                                             | 石墨<br>Graphite                                                                                                                                     | 填料型号<br>Model No.                                          | M800                      |    |
| 阀杆运动方式<br>Stem Motion                                                                                                        | 升降<br>Rising                                                                                                                                       | 新研发产品或现有产品<br>New or Current Product                       | 新研发产品<br>New Product      |    |
| 抽样方<br>Selected by                                                                                                           | 厂家<br>Manufacturer                                                                                                                                 | 送样日期<br>Collected Date                                     | 2021.06.01                |    |
| 样品编号<br>Sample No.                                                                                                           | ROCKP202103008-1                                                                                                                                   | 样品状态<br>Sample status                                      | 完好<br>Intact              |    |
| 检测项目<br>Test Item                                                                                                            | 密封性能试验<br>Sealing Performance Test                                                                                                                 | 阀杆直径（mm）<br>Stem Diameter                                  | 25.4                      |    |
| 填料截面尺寸（mm*mm）<br>Cross Section Dimensions                                                                                    | 6.3*6.3                                                                                                                                            | 填料压盖螺栓尺寸<br>Packing Gland Bolt Dia.                        | 5/8"                      |    |
| 填料压套内径（mm）<br>Packing Gland ID                                                                                               | 25.5                                                                                                                                               | 填料压套外径（mm）<br>Packing Gland OD                             | 38.1                      |    |
| 安装后填料压缩量（%）<br>Packing Compression                                                                                           | 17.2%                                                                                                                                              | 推荐填料拧紧扭矩（N·m）<br>Recommended Gland Tightening Torque       | 螺母 1<br>Nut 1             | 60 |
|                                                                                                                              |                                                                                                                                                    |                                                            | 螺母 2<br>Nut 2             | 60 |
| 机械循环总数<br>No. of Mechanical Cycles                                                                                           | 1510 次                                                                                                                                             | 热循环总数<br>No. of Thermal Cycles                             | 5                         |    |
| 最大试验压力（barg）<br>Maximum Test Pressure                                                                                        | 41.4                                                                                                                                               | 填料调整前已完成的机械循环数<br>Mechanical Cycles prior to Re-adjustment | N/A                       |    |
| 检漏仪品牌/型号/序列号<br>Leakage Detector Brand/ Model/ Serial Number                                                                 | Thermo Fisher Scientific /<br>TVA-2020 /<br>202017032075                                                                                           | 试验介质<br>Test Medium                                        | 99.9% 甲烷<br>99.9% Methane |    |
| 试验依据<br>Test Basis                                                                                                           | API 622-2018 第三版《生产过程阀门填料逸散性泄漏的型式试验》第四节<br>API 622-2018 Third Edition, Type Testing of Process Valve Packing for Fugitive Emissions, Sec.4         |                                                            |                           |    |
| 实验室名称及地址<br>Test Facility                                                                                                    | 中国浙江省永嘉县瓯北镇和一工业区岩石阀门检测实验室<br>ROCK Valve Testing Lab, Heyi Industrial Zone, Oubei, Yongjia, Zhejiang,PRC                                            |                                                            |                           |    |
| 填料配置 Packing Configuration:                                                                                                  |                                                                                                                                                    |                                                            |                           |    |
| ● 方形填料圈 Square ring shape<br>● 分段&编制 Split & Braided<br>● 整体&模压 Solid & Die-formed<br>● 金属丝或其它增强 Wire or other reinforcement |                                                                                                                                                    |                                                            |                           |    |

## 试验记录 Testing Data

| 试验时段<br>Test Segment                                                        | 静态泄漏<br>Static Leak<br>(ppmv) | 开方向动态<br>泄漏<br>Dynamic Leak during<br>Close<br>(ppmv) | 关方向动态<br>泄漏<br>Dynamic Leak during<br>Open<br>(ppmv) | 填料箱温度<br>Stuffing Box<br>Temperature<br>(°C) | 流道温度<br>Flow Line<br>Temperature<br>(°C) | 压盖螺栓扭矩<br>Gland Nut<br>Torque (N·m) |               | 判定<br>Evaluation |
|-----------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------|------------------------------------------------------|----------------------------------------------|------------------------------------------|-------------------------------------|---------------|------------------|
|                                                                             |                               |                                                       |                                                      |                                              |                                          | 螺母 1<br>Nut 1                       | 螺母 2<br>Nut 2 |                  |
| 第 1 天 Day 1<br>常温 Ambient<br>0-150 次循环<br>0-150 cycles<br>P= 41.4 barg      | 0.3                           | 0.5                                                   | 0.5                                                  | RT                                           | RT                                       | 60                                  | 60            | 合格 PASS          |
|                                                                             | 3.1                           | 2.9                                                   | 3                                                    | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 0.1                           | 0.1                                                   | 0.2                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 2.5                           | 2.3                                                   | 2.7                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 高温 Elevated<br>151-300 次循环<br>151-300 cycles<br>P= 41.4 barg                | 2.5                           | 4.8                                                   | 4.9                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 1.3                           | 1.5                                                   | 1.7                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 1.9                           | 2.4                                                   | 2.4                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 2.3                           | 2.7                                                   | 2.9                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 第 2 天 Day 2<br>常温 Ambient<br>301-450 次循环<br>301-450 cycles<br>P=41.4 barg   | 1.5                           | 1.9                                                   | 1.8                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 0.8                           | 1                                                     | 1.2                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 0.3                           | 0.2                                                   | 0.3                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 1                             | 1                                                     | 0.9                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 第 2 天 Day 2<br>高温 Elevated<br>451-600 次循环<br>451-600 cycles<br>P=41.4 barg  | 0.9                           | 1.2                                                   | 1.1                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 5.1                           | 4.9                                                   | 5.9                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 5                             | 5.3                                                   | 5.2                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 2.8                           | 3.2                                                   | 3.5                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 第 3 天 Day 3<br>常温 Ambient<br>601-750 次循环<br>601-750 cycles<br>P=41.4 barg   | 4.9                           | 10.2                                                  | 11.7                                                 | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 3.5                           | 3.4                                                   | 3.4                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 2.3                           | 2.2                                                   | 2.1                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 2.9                           | 3.2                                                   | 3.5                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 第 3 天 Day 3<br>高温 Elevated<br>751-900 次循环<br>751-900 cycles<br>P=41.4 barg  | 3.6                           | 4                                                     | 4.2                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 3.7                           | 3.8                                                   | 4                                                    | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 3.5                           | 4.8                                                   | 5.1                                                  | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | 4.2                           | 4.8                                                   | 5                                                    | 260                                          | 260                                      | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |
| 第 4 天 Day 4<br>常温 Ambient<br>901-1050 次循环<br>901-1050 cycles<br>P=41.4 barg | 2.5                           | 2.7                                                   | 2.7                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 1.8                           | 1.7                                                   | 1.8                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 2.5                           | 2.5                                                   | 2.4                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | 1                             | 0.9                                                   | 0.8                                                  | RT                                           | RT                                       | -                                   | -             | 合格 PASS          |
|                                                                             | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                   | -             | -                |

| 试验时段<br>Test Segment                                                                  | 静态泄漏<br>Static Leak<br>(ppmv) | 开方向动态<br>泄漏<br>Dynamic Leak during<br>Close<br>(ppmv) | 关方向动态<br>泄漏<br>Dynamic Leak during<br>Open<br>(ppmv) | 填料箱温度<br>Stuffing Box<br>Temperature<br>(°C) | 流道温度<br>Flow Line<br>Temperature<br>(°C) | 填料扭矩<br>Gland Nut<br>Torque (N·m) |               | 判定<br>Evaluation |
|---------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------|------------------------------------------------------|----------------------------------------------|------------------------------------------|-----------------------------------|---------------|------------------|
|                                                                                       |                               |                                                       |                                                      |                                              |                                          | 螺母 1<br>Nut 1                     | 螺母 2<br>Nut 2 |                  |
| 第 4 天 Day 4<br>高温 Elevated<br>1051-1200 次<br>循环<br>1051-1200<br>cycles<br>P=41.4 barg | 4.3                           | 4.4                                                   | 4.5                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 4.5                           | 4.6                                                   | 4.7                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 3.2                           | 2.8                                                   | 3.4                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 3.3                           | 3.2                                                   | 3.1                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
| 第 5 天 Day 5<br>常温 Ambient<br>1201-1350 次<br>循环<br>1201-1350<br>cycles<br>P=41.4 barg  | 3.2                           | 3.3                                                   | 3.3                                                  | RT                                           | RT                                       | -                                 | -             | 合格 PASS          |
|                                                                                       | 2.2                           | 2.1                                                   | 2.1                                                  | RT                                           | RT                                       | -                                 | -             | 合格 PASS          |
|                                                                                       | 3.1                           | 3.5                                                   | 3.4                                                  | RT                                           | RT                                       | -                                 | -             | 合格 PASS          |
|                                                                                       | 1.9                           | 2.1                                                   | 2                                                    | RT                                           | RT                                       | -                                 | -             | 合格 PASS          |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
| 第 5 天 Day 5<br>高温 Elevated<br>1351-1500 次<br>循环<br>1351-1500<br>cycles<br>P=41.4 barg | 3                             | 3.4                                                   | 3.3                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 4.4                           | 4.7                                                   | 4.7                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 2.8                           | 2.8                                                   | 2.7                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | 2.8                           | 2.9                                                   | 2.9                                                  | 260                                          | 260                                      | -                                 | -             | 合格 PASS          |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
| 第 6 天 Day 6<br>常温 Ambient<br>1501-1510 次<br>循环<br>1501-1510<br>cycles<br>P=41.4 barg  | 2.7                           | 2.5                                                   | 2.7                                                  | RT                                           | RT                                       | -                                 | -             | 合格 PASS          |
|                                                                                       | 2.7                           | 2.7                                                   | 2.7                                                  | RT                                           | RT                                       | 45.4                              | 46.5          | 合格 PASS          |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
|                                                                                       | -                             | -                                                     | -                                                    | -                                            | -                                        | -                                 | -             | -                |
| 备注 Note:<br>RT 温度范围为 15°C 至 40°C。<br>RT is between 15°C to 40°C                       |                               |                                                       |                                                      |                                              |                                          |                                   |               |                  |

## 试验结果 Test Results:

|                                                    |          |                                        |           |
|----------------------------------------------------|----------|----------------------------------------|-----------|
| 最大允许泄漏量<br>Maximum Allowable<br>Leakage            | 100 ppmv | 实测最大泄漏量<br>Maximum Leakage<br>Detected | 11.7 ppmv |
| 填料泄漏量是否低于允许值? Was Packing Leakage Below Allowable? |          |                                        |           |
| 是 YES                                              |          |                                        |           |

编制: 陈克泽  
Prepared by:

日期: 2021.6.13  
Date:

审核: 胡丁林  
Reviewed by:

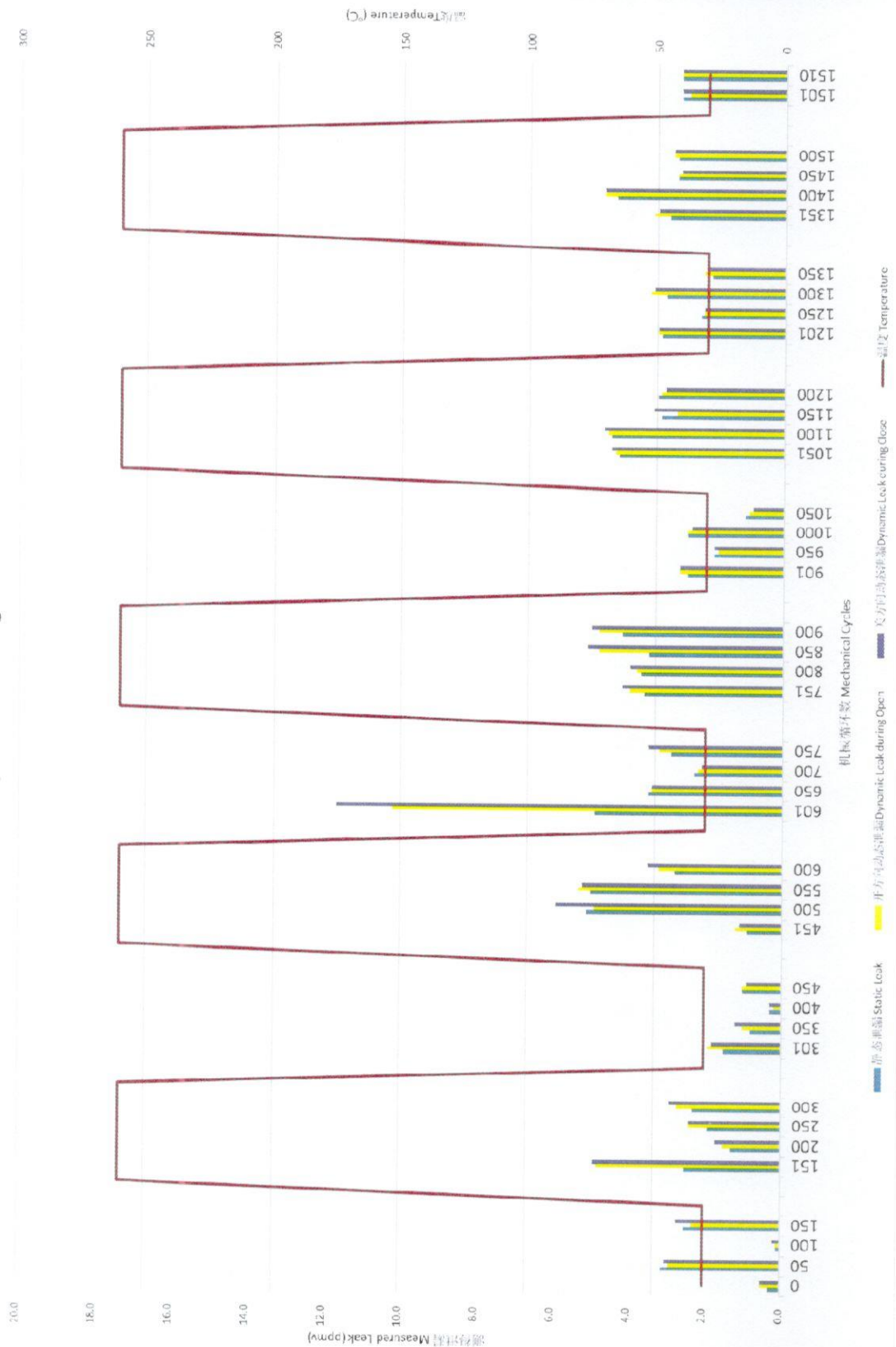
日期: 2021.6.13  
Date:

批准: 13/6-21  
Approved by:

日期: 13/6-21  
Date:

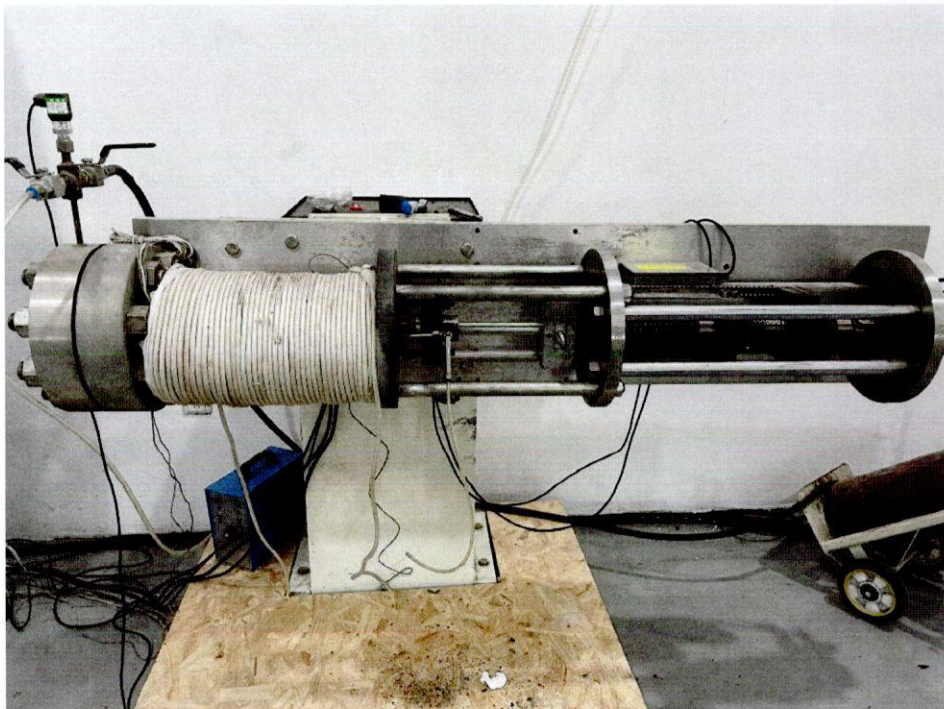
试验结果图表 Test Result Graph

API 622低泄漏试验结果图表  
Test Result Graph of API 622 Fugitive Emissions Test

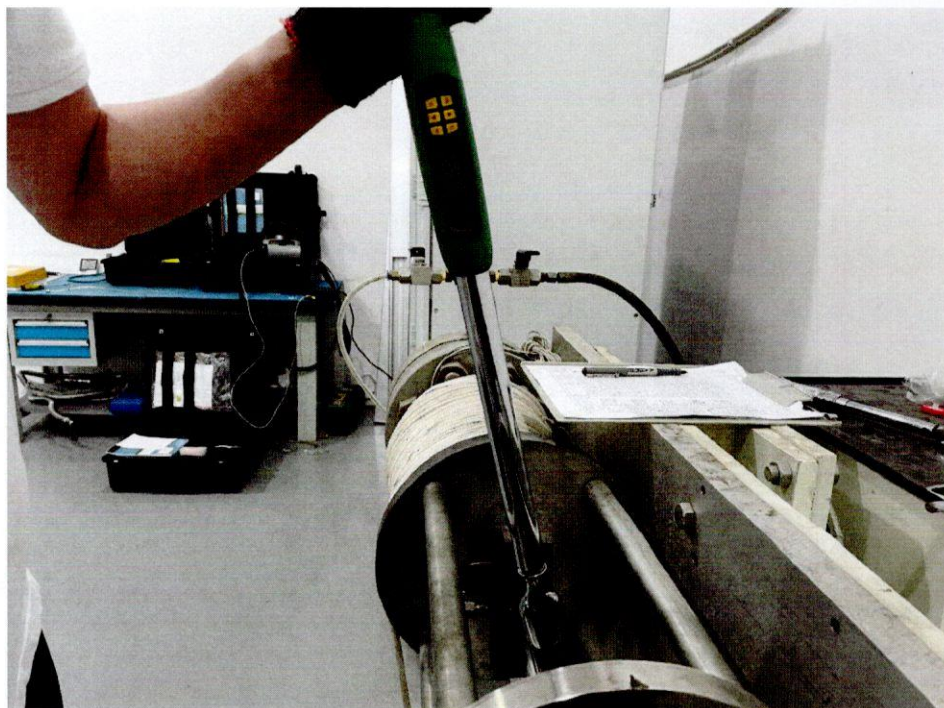


照片记录 Photographic record

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试验装置 Test Rig



扭矩测量 Torque Measurement



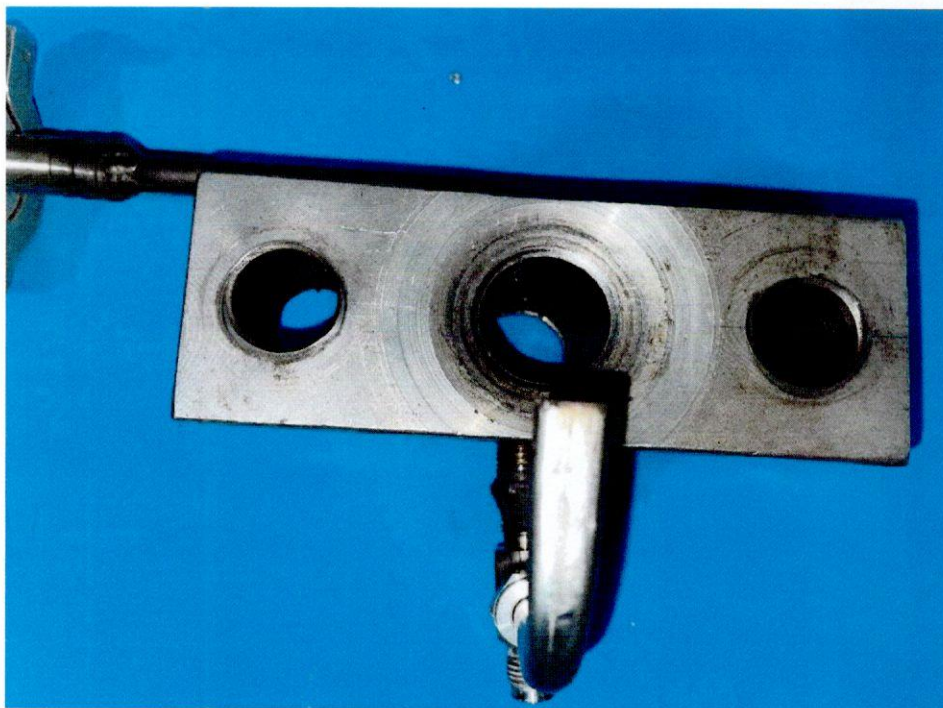
试验前的填料环 Packing rings before test



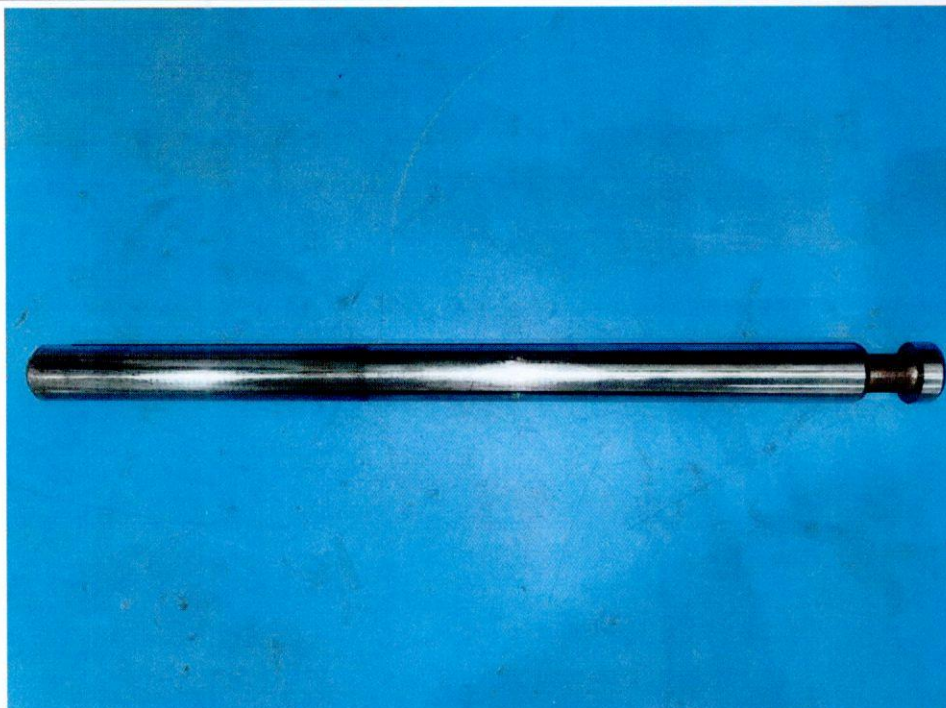
试验后的填料环 Packing rings after test



试验后的填料压套 Gland follower after test



填料压盖 Gland flange

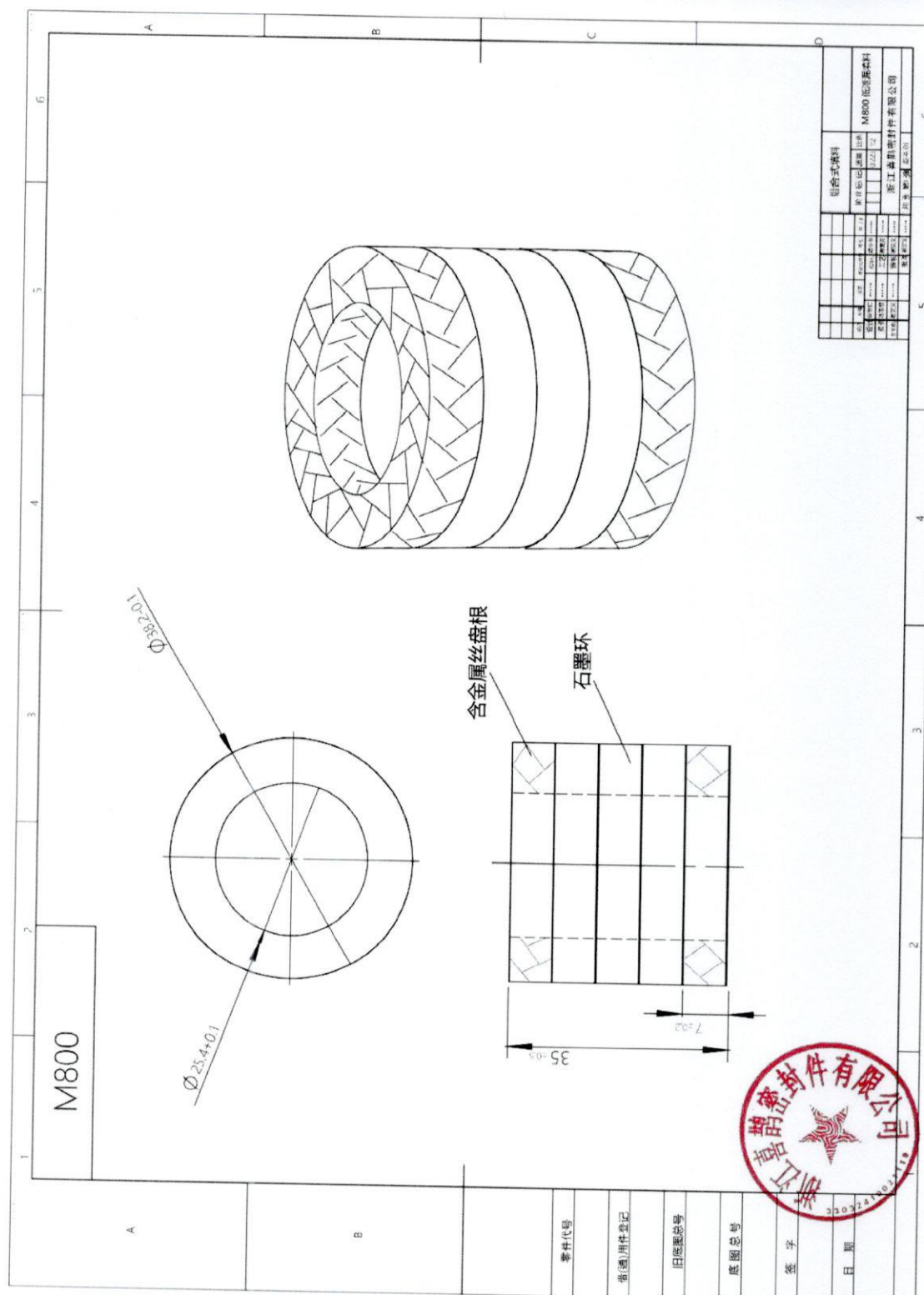


试验后的阀杆 Stem after test



填料函内孔 Stuffing box internal

填料配置图纸 Packing configuration drawing



\*\*\*报告结束\*\*\*

\*\*\*End of report\*\*\*