

# Certificate

## Certificate of Conformity with Fugitive Emission Testing According to

**ISO 15848-1:2015 + Amd 1:2017**

**Certificate no.:** 01 202 CHN/K-251016-Z  
**Name and address of the  
applicant / license holder:** Zhejiang Magpie Sealing Element Co., Ltd.  
No.9 Xiezhai Alley, Puyi Village, Oubei Street, Yongjia County,  
Wenzhou City, Zhejiang Province, China

*We hereby certify that the results of Valve Stem Assembly Sealing System tests carried out under our inspection on the below industrial valve(s) meeting the requirements in the standard mentioned above. This certificate does not imply assessment of the product production. It reflects only our inspection for tested valve described herein at the time and the place of test, and does not refer to any other matters. Detail valve technical data and manufacturer's information, refer to appendix and test report.*

**Model/ Type identification** 4" CL600 Caged Control Valve  
**Description of tested valve:** NPS4 CL600 Caged Control Valve, Body:ASTM A216 WCB, Stem:  
SS304, Body seal:SS304+Graphite, Stem seal: Graphite Packing,  
Design standard: GB/T12224-2005  
**Name and address of the  
manufacturer:** Zhejiang Magpie Sealing Element Co., Ltd.  
No.9 Xiezhai Alley, Puyi Village, Oubei Street, Yongjia County, Wenzhou  
City, Zhejiang Province, China  
**General drawing number:** AB4C701-100-600-RF-PN  
**Test report number:** ROCKB202501022-1  
**Test medium/ Criteria:** Helium /  $\leq 2.49 \times 10^{-5}$  mbar  $\times$  l/s (stem seal),  $\leq 50$ ppmv(body seal)  
**Test result:** Passed  
**Performance class:** ISO FE BH - CC3 - SSA0 – tRT(260°C) – CL600 - ISO15848-1

### Extension of qualification to untested valves in accordance with ISO15848-1: 2015 Paragraph 8

Other valve stem size qualified for:  $\varnothing 7 \sim 28$  mm  
Other pressure ranges qualified for: Equal Class 600 or lower

Place: Beijing

**Wang Weigang**  
Technical Expert

Date: 22 May., 2025

TÜV Rheinland (China) Ltd.  
Industrial Services & Cybersecurity Greater China



TÜV Rheinland (China) Ltd.  
Room 301, 3F and Room 1203, 12F, Building C, CATIC Plaza,  
No. 15, Ronghua South Road, Beijing Economic-Technological  
Development Area, Beijing, China.100176, Tel.: 010-85242222

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ISO15848-1 Rev.20221110  
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Precisely Right.

## Construction & Test Data

**Name and address of the applicant / license holder:** Zhejiang Magpie Sealing Element Co., Ltd.  
No.9 Xiezhai Alley, Puyi Village, Oubei Street, Yongjia County,  
Wenzhou City, Zhejiang Province, China

**Name and address of the manufacturer:** Zhejiang Magpie Sealing Element Co., Ltd.  
No.9 Xiezhai Alley, Puyi Village, Oubei Street, Yongjia County,  
Wenzhou City, Zhejiang Province, China

**Test facility:** Zhejiang Rock Mechanical Inspection and Testing Co., Ltd.

**Test report No.:** ROCKB202501022-1

|                                                        |                                                                                                                                                                  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Model/ Type identification</b>                      | 4" CL600 Caged Control Valve                                                                                                                                     |
| <b>Description of tested valve:</b>                    | NPS4 CL600 Caged Control Valve, Body:ASTM A216 WCB, Stem: SS304, Body seal:SS304+Graphite, Stem seal: Graphite Packing, Design standard: GB/T12224-2005          |
| <b>Serials number of tested valve:</b>                 | 2024007258                                                                                                                                                       |
| <b>Performance class:</b>                              | ISO FE BH - CC3 - SSA0 – tRT(260°C) – CL600 - ISO15848-1                                                                                                         |
| <b>General drawing number:</b>                         | AB4C701-100-600-RF-PN                                                                                                                                            |
| <b>Stem drawing number:</b>                            | AB4C701-100-600-RF-06                                                                                                                                            |
| <b>Stem sealing type / Size (Ring Qty.):</b>           | Graphite Packing / $\Phi 14 \times \Phi 30 \times 30$ mm (6)                                                                                                     |
| <b>Stem sealing Manufacturer / Model / Description</b> | Zhejiang Magpie Sealing Element Co., Ltd. / M900<br>2 nos. of metal-wire-reinforced braided graphite rings + 4 nos. of polymer-reinforced braided graphite rings |
| <b>Body sealing type / Size (Ring Qty.):</b>           | SS304+Graphite / $\Phi 120 \times \Phi 135 \times 3.5$ mm (1), $\Phi 135 \times \Phi 155 \times 3.5$ mm (1)                                                      |
| <b>Stem size:</b>                                      | $\Phi 14$ mm                                                                                                                                                     |
| <b>Test medium/ Criteria:</b>                          | Helium/ $\leq 2.49 \times 10^{-5}$ mbar $\times$ l/s (stem seal), $\leq 50$ ppmv(body seal)                                                                      |
| <b>Test result/ Leakage rate:</b>                      | Passed /Max. $6.21 \times 10^{-6}$ mbar $\times$ l/s(stem seal),Max.35.7ppmv(body seal)                                                                          |

*The Valve Sealing System is in compliance with the above mentioned requirements. The test and the classification is based on a type approval and does not include the factory inspection.*

### Extension of qualification to untested valves in accordance with ISO15848-1: 2015 Paragraph 8

Other valve stem size qualified for:  $\Phi 7 \sim 28$  mm  
Other pressure ranges qualified for: Equal Class 600 or lower

An Ji  
Project Engineer  
Date: 22 May., 2025

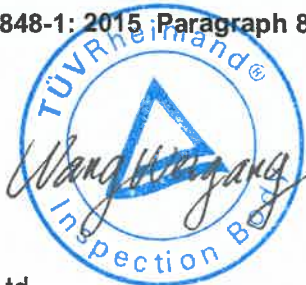
Place: Beijing

An Ji

Wang Weigang  
Technical Expert  
Date: 22 May., 2025

TÜV Rheinland (China) Ltd.  
Industrial Services & Cybersecurity Greater China

TÜV Rheinland (China) Ltd.  
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No. 15, Ronghua South Road, Beijing Economic-Technological  
Development Area, Beijing, China.100176, Tel.: 010-85242222





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. ROCKB202501022-1

产品名称  
Product Name

4" CL600 套筒调节阀  
4" CL600 Caged Control Valve

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

试验项目  
Test Project

ISO 15848-1 阀门逸散性试验  
ISO 15848-1 Valve Fugitive Emission Test

试验起始日期  
Date Started

2025 年 3 月 29 日  
March 29, 2025

试验结束日期  
Date Finished

2025 年 4 月 10 日  
April 10, 2025



☐ inspected ☒ reviewed ☒ witnessed

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



## 声明 Statement

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7. 本公司承诺保护委托单位在检测业务中涉及的商业信息、技术文件和商业秘密等，妥善处理相关资料、样品和数据。

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

Address: Heyi Industrial Zone, Oubei, Yongjia, Wenzhou, Zhejiang.

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网 址 Web: www.rock-lab.cn



☐ inspected ☒ reviewed ☒ witnessed



## 概述 Summary:

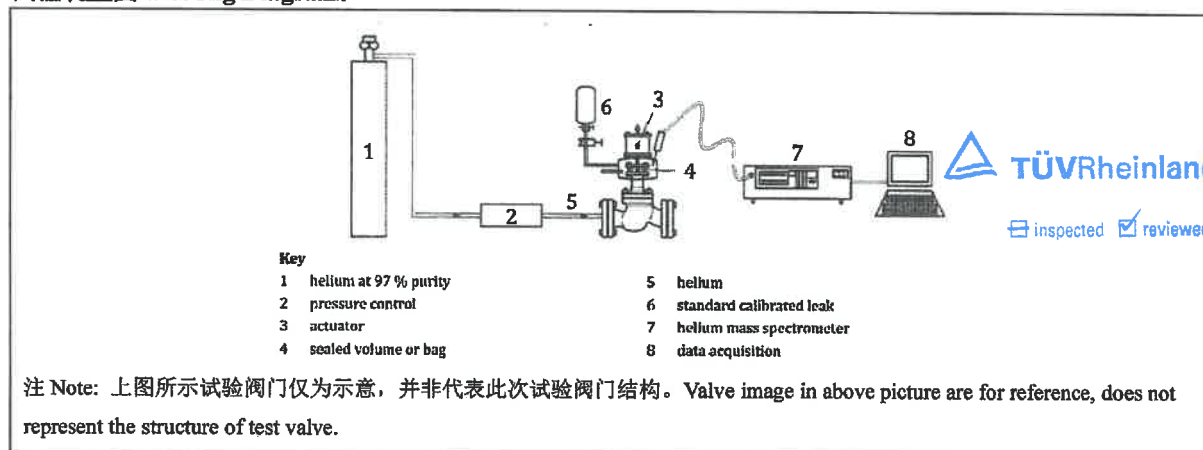
|                                      |                                                                                                                                                                                                                                                                                                         |                                                                                                            |                              |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------|
| 阀门尺寸/压力/类型<br>Valve Size/Rating/Type | 4" CL600 套筒调节阀<br>4" CL600 Caged Control Valve                                                                                                                                                                                                                                                          | 产品系列号<br>Product SN                                                                                        | 2024007258                   |
| 总装图号<br>GA Drawing No.               | AB4C701-100-600-RF-PN                                                                                                                                                                                                                                                                                   | 设计标准<br>Design Standards                                                                                   | GB/T 12224-2005              |
| 阀杆运动方式<br>Stem Motion                | 升降<br>Rising                                                                                                                                                                                                                                                                                            | 执行器类型<br>Actuator type                                                                                     | 气动<br>Pneumatic              |
| 阀体材料<br>Body Material                | ASTM A216 WCB                                                                                                                                                                                                                                                                                           | 阀体密封描述<br>Body Seal Description                                                                            | 垫片<br>Gasket                 |
| 阀杆材料<br>Stem Material                | SS304                                                                                                                                                                                                                                                                                                   | 阀杆直径<br>Stem Diameter                                                                                      | Φ 14mm                       |
| 阀杆密封描述<br>Stem Seal Description      | 填料<br>Packing                                                                                                                                                                                                                                                                                           | 炉号<br>Heat No.                                                                                             | H2388 (阀体 Body)              |
| 试验标准<br>Test Basis                   | DIN EN ISO 15848-1: 2017-07 工业阀门-逸散性排放的测量、试验和鉴定程序<br>第 1 部分: 用于阀门型式试验的分级体系和鉴定程序<br>DIN EN ISO 15848-1: 2017-07 <i>Industrial valves – Measurement, test and qualification procedures for fugitive emissions – Part 1: Classification system and qualification procedures for type testing of valves</i> |                                                                                                            |                              |
| 试验场地<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                                                                                                                                                                                                |                                                                                                            |                              |
| 抽样方<br>Valve Selected by             | 委托单位<br>Customer                                                                                                                                                                                                                                                                                        | 收样日期<br>Sample Collect Date                                                                                | 2025-03-27                   |
| 样品编号<br>Sample No.                   | ROCKP202501022-1                                                                                                                                                                                                                                                                                        | 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                                                                                                                                                                                                                                                                      | 试验介质<br>Test medium                                                                                        | 99.999% 氦气<br>99.999% Helium |
| 性能等级<br>Performance Class            | ISO FE BH – CC3 – SSA0 – tRT(260°C) – CL600 – ISO15848-1                                                                                                                                                                                                                                                |                                                                                                            |                              |
| 覆盖范围<br>Extension of Qualification   | 覆盖条件<br>Criteria for Qualification Extension                                                                                                                                                                                                                                                            | 备注<br>Remarks                                                                                              |                              |
|                                      | 阀杆直径: 7mm 至 28mm<br>Stem diameter: from 7mm to 28mm                                                                                                                                                                                                                                                     | 详细要求见 DIN EN ISO 15848-1: 2017-07 第 8 节。<br>Refer to Section 8 of DIN EN ISO 15848-1: 2017-07 for details. |                              |
|                                      | 阀门压力等级: CL600 或以下<br>Valve rating: CL600 or lower                                                                                                                                                                                                                                                       |                                                                                                            |                              |
|                                      | 温度范围: +5°C至+260°C<br>Temperature range: from +5°C to +260°C                                                                                                                                                                                                                                             |                                                                                                            |                              |
|                                      | 泄漏等级: BH 或 CH<br>Leakage Class: BH or CH                                                                                                                                                                                                                                                                |                                                                                                            |                              |
|                                      | 机械循环等级: CC1, CC2, CC3<br>Mechanical-cycle class: CC1, CC2, CC3                                                                                                                                                                                                                                          |                                                                                                            |                              |
| 试验结论<br>Test Conclusion              | 阀门是否通过试验要求?<br>Did valve pass test requirements?                                                                                                                                                                                                                                                        |                                                                                                            |                              |

编制/日期: 陈克洋  
PRPD/DATE: 2025.4.12审核/日期: 金尔亮  
CHKD/DATE: 2025.4.12批准/日期:  
APPD/DATE:

## 阀门密封设计信息 Valve Sealing Design Information:

| 阀杆密封描述<br>Stem Seal Description                                   |                                            | 填料<br>Packing                                                                                                                                                             |            |   |
|-------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---|
| 填料参数<br>Packing<br>Parameter                                      | 厂家 / 型号 (若有)<br>Mfr. / Model (if have)     | 浙江喜鹊密封件有限公司 / M900<br>Zhejiang Magpie Sealing Element Co. Ltd. / M900                                                                                                     |            |   |
|                                                                   | 填料描述<br>Description                        | 石墨填料<br>(2个带金属丝加强编织石墨圈 + 4个高分子材料编织石墨圈)<br>Graphite packing / 2 nos. of metal-wire-reinforced braided graphite rings + 4 nos. of polymer-reinforced braided graphite rings |            |   |
|                                                                   | 材料<br>Material                             | 石墨<br>Graphite                                                                                                                                                            | 数量<br>Qty. | 6 |
|                                                                   | 填料尺寸(内径×外径×总高)<br>Packing Size (ID×OD×TK)  | Φ 14mm×Φ 30mm×30mm                                                                                                                                                        |            |   |
|                                                                   | 填料压盖螺母拧紧扭矩<br>Gland Bolt Tightening Torque | 42 N·m                                                                                                                                                                    |            |   |
| 阀体密封描述<br>Body Seal Description                                   |                                            | 垫片<br>Gasket                                                                                                                                                              |            |   |
| 垫片参数<br>Gasket<br>Parameter                                       | 厂家 / 型号 (若有)<br>Mfr. / Model (if have)     | /                                                                                                                                                                         |            |   |
|                                                                   | 材料<br>Material.                            | SS304+石墨<br>SS304 + Graphite                                                                                                                                              | 数量<br>Qty. | 1 |
|                                                                   | 垫片尺寸(内径×外径×厚度)<br>Gasket Size (ID×OD×TK)   | Φ 120mm×Φ 135mm×3.5mm                                                                                                                                                     |            |   |
|                                                                   | 螺栓拧紧扭矩<br>Bolt Tighten Torque              | 290 N·m                                                                                                                                                                   |            |   |
| 垫片参数<br>Gasket<br>Parameter                                       | 厂家 / 型号 (若有)<br>Mfr. / Model (if have)     | /                                                                                                                                                                         |            |   |
|                                                                   | 材料<br>Material.                            | SS304+石墨<br>SS304 + Graphite                                                                                                                                              | 数量<br>Qty. | 1 |
|                                                                   | 垫片尺寸(内径×外径×厚度)<br>Gasket Size (ID×OD×TK)   | Φ 135mm×Φ 155mm×3.5mm                                                                                                                                                     |            |   |
|                                                                   | 螺栓拧紧扭矩<br>Bolt Tighten Torque              | 290 N·m                                                                                                                                                                   |            |   |
| 其它位置的密封设计及描述<br>Sealing Design and Description of other locations |                                            | /                                                                                                                                                                         |            |   |

## 试验装置图 Test Rig Diagram:



## 泄漏测量设备 Leakage Detection Equipment

|                                    |                                |                                           |                                          |
|------------------------------------|--------------------------------|-------------------------------------------|------------------------------------------|
| 设备名称<br>Device Name                | 氦质谱检漏仪<br>He mass spectrometer | 品牌/型号/系列号<br>Brand / Model / SN           | Leybold / PHOENIX<br>Vario / 90001653510 |
| 设备ID<br>Device ID                  | J002                           | 灵敏度<br>Sensitivity                        | 5E-12 mbar·l·s <sup>-1</sup>             |
| 真空氮漏孔编号<br>Helium Standard Leak SN | D210732                        | 真空氮漏孔有效期<br>Helium Standard Leak Validity | 2026-02-05                               |

## 试验条件 Test Conditions:

|                                                  |                                                    |                                                      |                               |
|--------------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------------------------|
| 最大允许泄漏量<br>Maximum Allowable<br>Measured Leakage | 阀杆密封Stem seals<br>≤2.49E-05 mbar·l·s <sup>-1</sup> | 试验压力/升温温度<br>Test Pressure / Elevated<br>Temperature | 10.21MPa@RT<br>8.31MPa@+260°C |
|                                                  | 阀体密封Body seals<br>≤50 ppmv                         |                                                      |                               |
| 总温度循环数<br>Total Thermal Cycles                   | 4                                                  | 总机械循环数<br>Total Mechanical Cycles                    | 100000                        |

## 试验结果 Test Results:

|                                                                     |          |                                                     |          |
|---------------------------------------------------------------------|----------|-----------------------------------------------------|----------|
| 完成温度循环数<br>Number of Thermal Cycles<br>Completed                    | 4        | 完成机械循环数<br>Number of Mechanical<br>Cycles Completed | 100000   |
| 阀杆处最大泄漏量<br>Maximum Leakage Through<br>Stem, mbar·l·s <sup>-1</sup> | 6.21E-06 | 阀体密封最大泄漏量<br>Max. Body Seal Leakage,<br>ppmv        | 35.7     |
| 阀门泄漏量是否低于允许值?<br>Was Valve Leakage Below Allowable?                 |          |                                                     | 是<br>YES |

## 阀门操作扭矩 Valve Operating Torque:

|                                                    |   |
|----------------------------------------------------|---|
| 第一次循环开启方向起始扭矩<br>BTO @ 1 <sup>st</sup> cycle (N·m) | / |
| 第一次循环关闭方向起始扭矩<br>BTC @ 1 <sup>st</sup> cycle (N·m) | / |
| 最后一次循环开启方向起始扭矩<br>BTO @ last cycle (N·m)           | / |
| 最后一次循环关闭方向起始扭矩<br>BTC @ last cycle (N·m)           | / |
| 齿轮箱齿比<br>Gearbox Ratio                             | / |

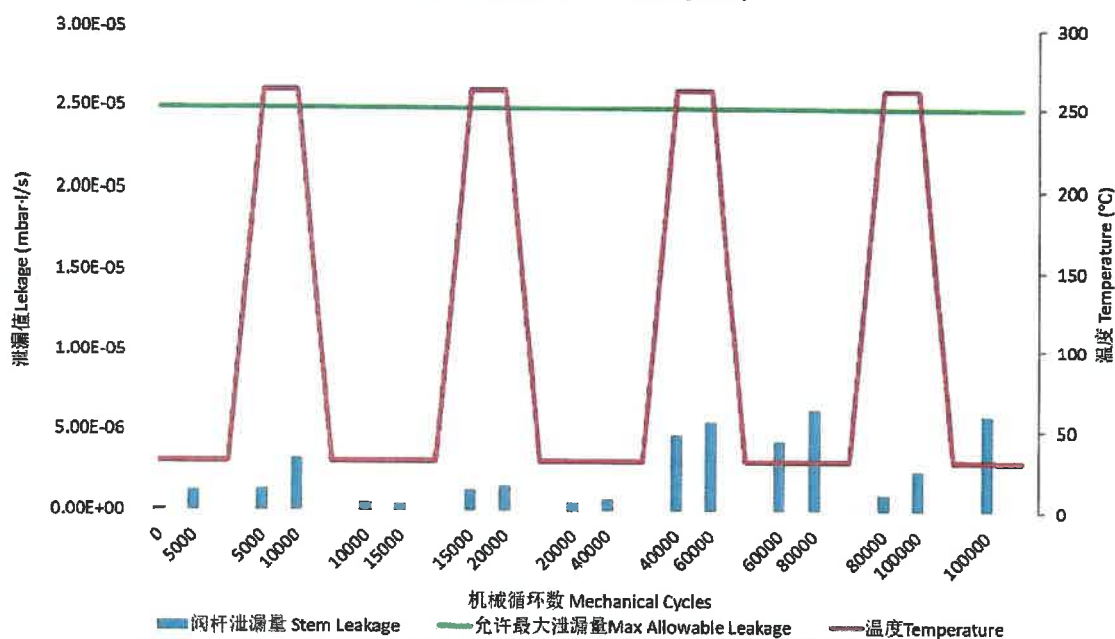
## 备注Remark:

1. 气动阀门，操作力未直接测量。Pneumatic valve, operating force was not measured directly.
2. 气源压力3.5 bar. Air source pressure is 3.5 bar.
3. 气动执行器型号为 LHA3R. Pneumatic actuator model is LHA3R.

## 试验数据 Test Data:

| 循环数<br>Cycle<br>Number | 试验温度<br>Test Temperature |        |        | 压力<br>Pressure<br>MPa | 阀杆净泄漏量<br>Net Stem Leakage<br>mbar·l·s <sup>-1</sup> | 阀体净泄漏<br>Net Body Leakage<br>ppmv | 判定<br>Evaluation |
|------------------------|--------------------------|--------|--------|-----------------------|------------------------------------------------------|-----------------------------------|------------------|
|                        | TC1-°C                   | TC2-°C | TC3-°C |                       |                                                      |                                   |                  |
| 0                      | RT                       | RT     | RT     | 10.21                 | 1.02E-07                                             | 2.43                              | 合格 Pass          |
| 5000                   | RT                       | RT     | RT     | 10.21                 | 1.24E-06                                             | /                                 | 合格 Pass          |
| 5000                   | 260.9                    | 260.7  | 258.4  | 8.35                  | 1.34E-06                                             | /                                 | 合格 Pass          |
| 10000                  | 261.5                    | 260.9  | 259.4  | 8.35                  | 3.17E-06                                             | /                                 | 合格 Pass          |
| 10000                  | RT                       | RT     | RT     | 10.21                 | 4.95E-07                                             | /                                 | 合格 Pass          |
| 15000                  | RT                       | RT     | RT     | 10.21                 | 4.29E-07                                             | /                                 | 合格 Pass          |
| 15000                  | 261.3                    | 260.5  | 260.2  | 8.35                  | 1.27E-06                                             | /                                 | 合格 Pass          |
| 20000                  | 261.4                    | 260.8  | 260.6  | 8.35                  | 1.52E-06                                             | /                                 | 合格 Pass          |
| 20000                  | RT                       | RT     | RT     | 10.21                 | 5.27E-07                                             | 25.2                              | 合格 Pass          |
| 40000                  | RT                       | RT     | RT     | 10.21                 | 7.24E-07                                             | /                                 | 合格 Pass          |
| 40000                  | 260.7                    | 260.0  | 258.4  | 8.35                  | 4.67E-06                                             | /                                 | 合格 Pass          |
| 60000                  | 260.9                    | 260.3  | 259.6  | 8.35                  | 5.43E-06                                             | /                                 | 合格 Pass          |
| 60000                  | RT                       | RT     | RT     | 10.21                 | 4.29E-06                                             | 28.0                              | 合格 Pass          |
| 80000                  | RT                       | RT     | RT     | 10.21                 | 6.21E-06                                             | /                                 | 合格 Pass          |
| 80000                  | 260.7                    | 260.6  | 258.7  | 8.35                  | 1.02E-06                                             | /                                 | 合格 Pass          |
| 100000                 | 261.3                    | 261.0  | 259.5  | 8.35                  | 2.45E-06                                             | /                                 | 合格 Pass          |
| 100000                 | RT                       | RT     | RT     | 10.21                 | 5.87E-06                                             | 35.7                              | 合格 Pass          |

阀杆泄漏值图表 Stem Leakage Graph



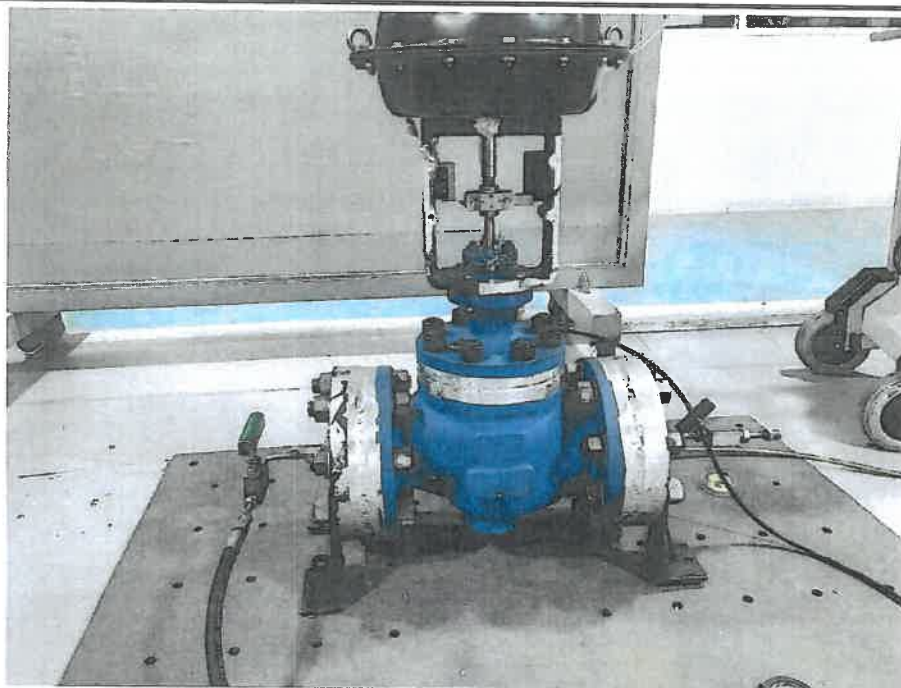
## 备注 Note:

- RT 温度范围为+5℃至+40℃。RT is in the range of +5℃ to +40℃.
- TC1 位置: 流道; TC2 位置: 阀体表面; TC3 位置: 填料函表面。  
TC1 Location: flow path; TC2 Location: valve body surface; TC3 Location: stuffing box surface.
- 阀体净泄漏测量值为各处阀体密封泄漏测量值中最大值。  
Net Body Leakage measurement is the maximum value of measurements on all body seals.

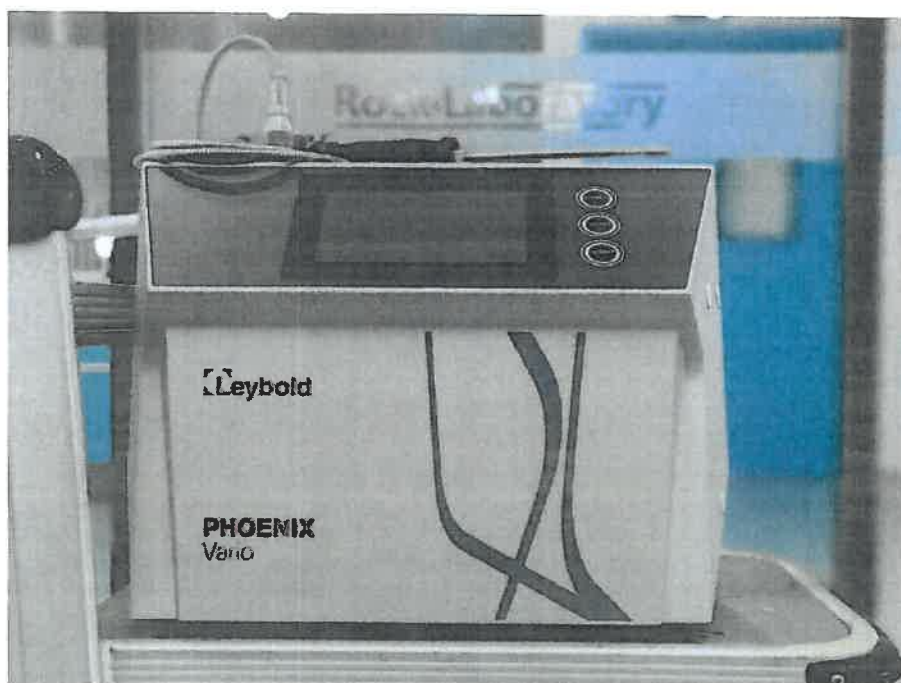


照片记录 Photographic Record

试验流程 Testing Process



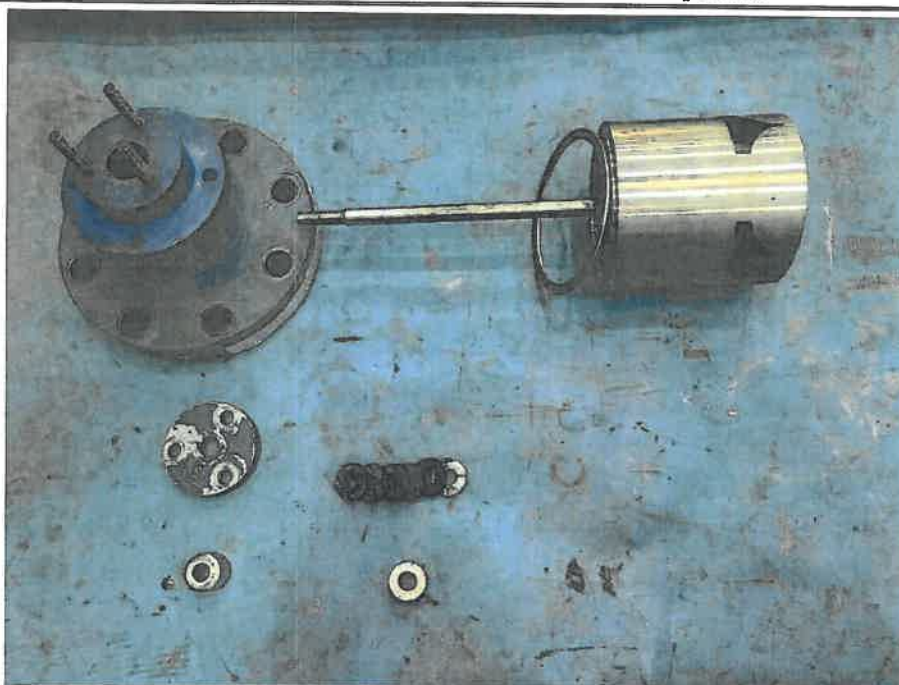
试验阀门 Tested valve



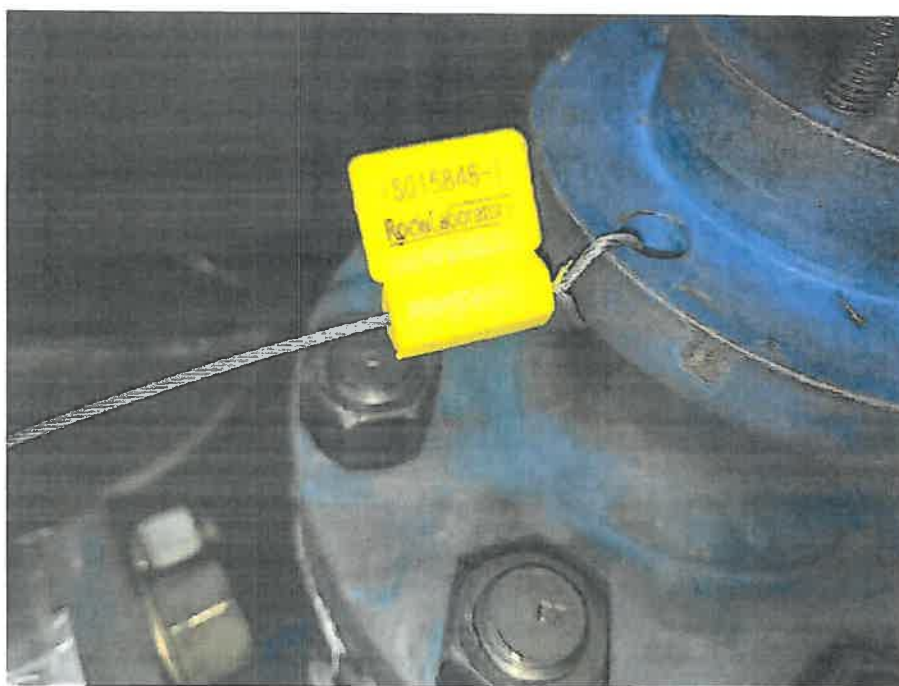
检漏仪 Leakage detector

**照片记录 Photographic Record**

**阀门拆解后零部件 Post-disassembly Valve Components**



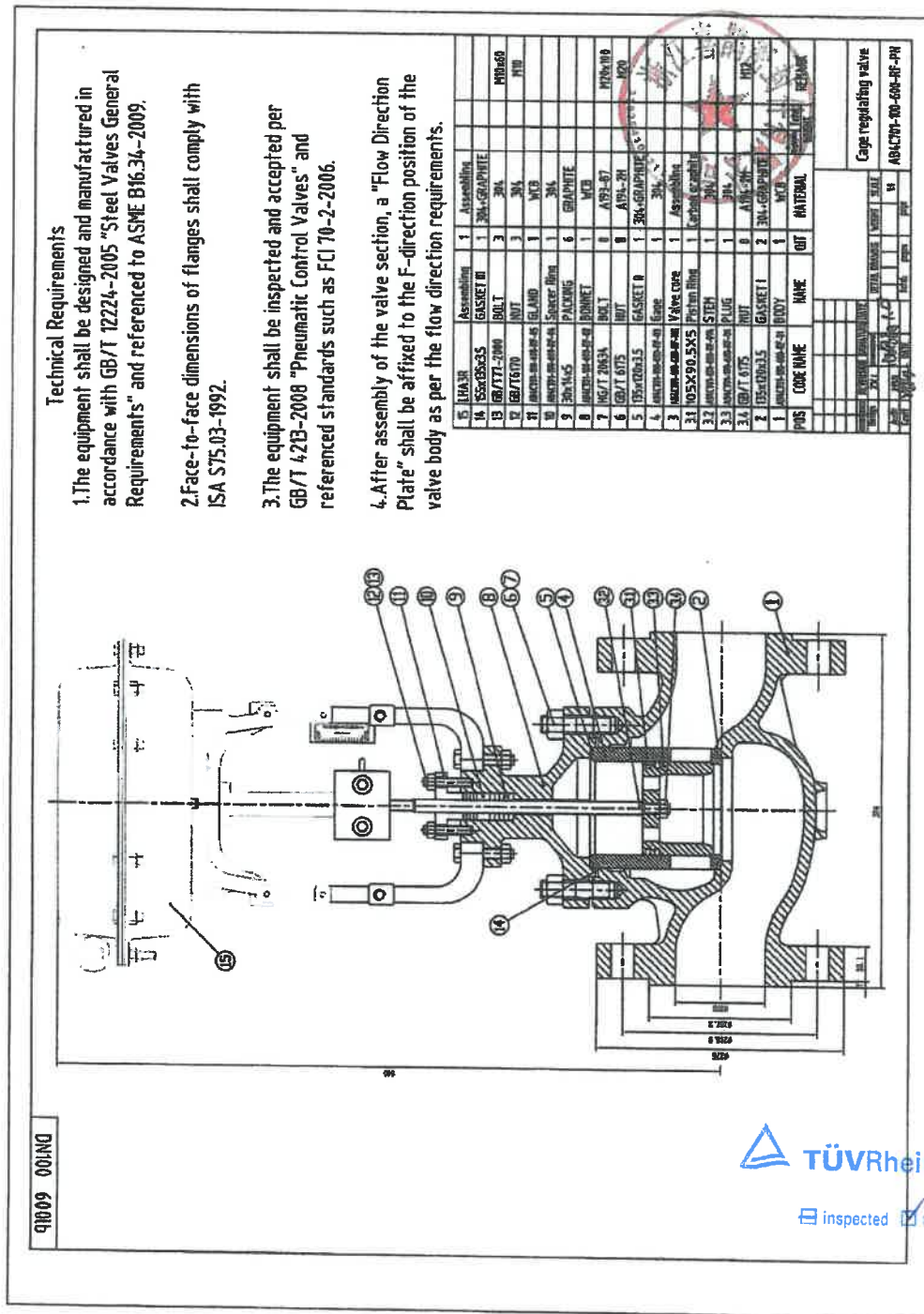
阀门拆解 Valve disassembly



试验标识 Test Marking

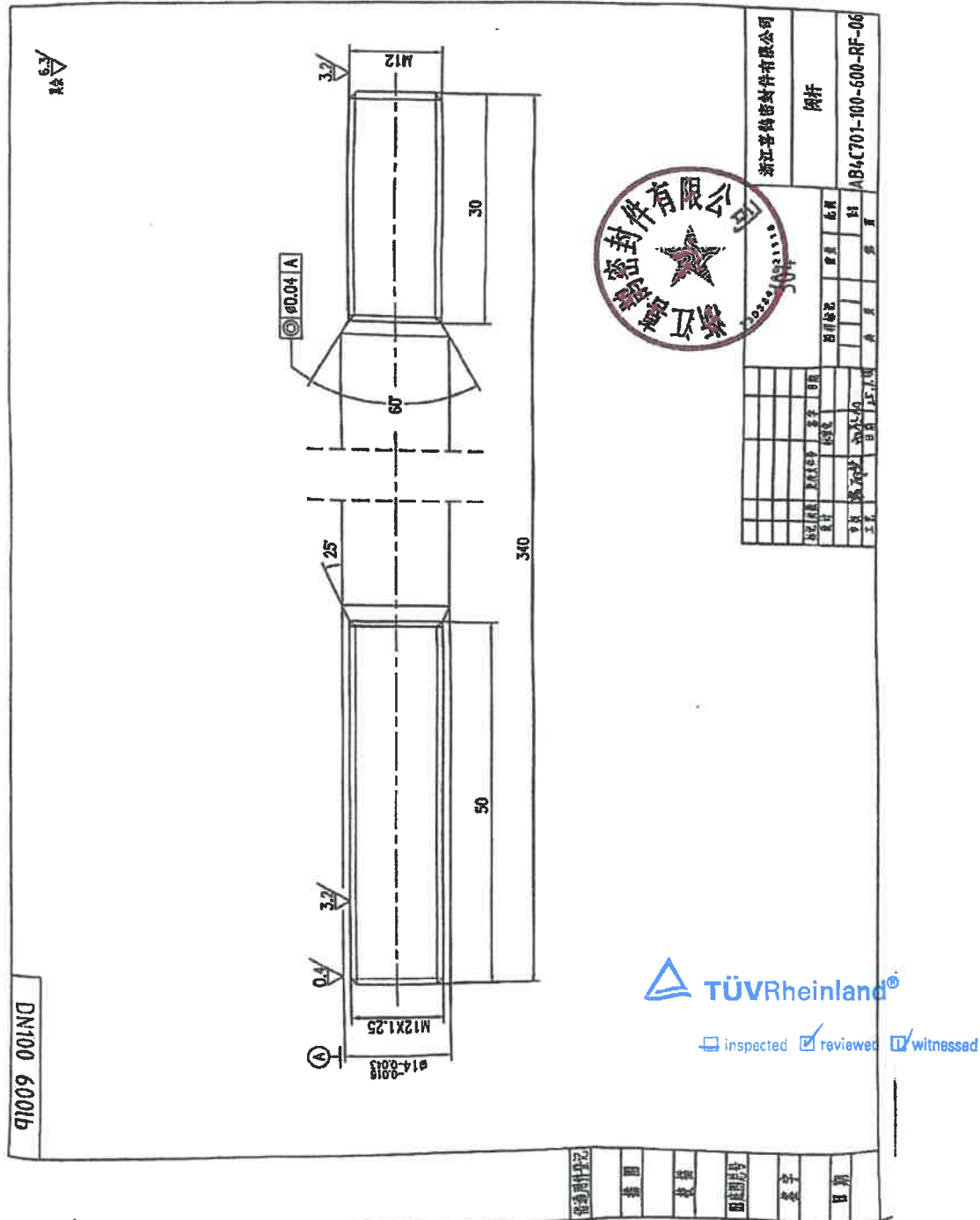
## 阀门图纸 Valve Drawings

## 总装图 General Assembly



## 阀门图纸Valve Drawings

**閥杆 Stem**





## 厂家试验记录 Test record by Manufacturer

## 压力试验记录 Pressure test record

浙江喜鹊密封件有限公司  
调节阀检验纪录

|             |  |                                              |  |              |  |                      |  |           |  |                                              |  |                      |  |             |  |        |  |            |  |             |  |
|-------------|--|----------------------------------------------|--|--------------|--|----------------------|--|-----------|--|----------------------------------------------|--|----------------------|--|-------------|--|--------|--|------------|--|-------------|--|
| QR/23-05A   |  | 检验执行标准: 气动QB/T 4213-2008 (电动QB/T 10869-2008) |  | JB/T7387-94) |  | 合同(生产单)号: OKD-VF5015 |  |           |  |                                              |  |                      |  |             |  |        |  |            |  |             |  |
| 产品名称        |  | 气动调节阀                                        |  | 产品型号         |  | JPCB                 |  | 公称通径DN    |  | 100mm                                        |  | 公称压力PN               |  | 600LB       |  | 产品编号   |  | 2024007258 |  |             |  |
| 产品位号        |  | RA-1680                                      |  | CV           |  | 175                  |  | 阀体材质/炉号   |  | WCB                                          |  | 304                  |  | 填料材质        |  | 石墨     |  | 泄漏等级       |  | IV          |  |
| 流量特性        |  | EQ %                                         |  | 额定行程         |  | 40                   |  | 作用方式      |  | 气开                                           |  | 电源                   |  | /           |  | 电气信号   |  | 4-20mA     |  | 80-2400 KPa |  |
| 执行机构        |  | LHA3R                                        |  | 工作温度         |  | -17~425℃             |  | 测试环境要求    |  | 温度                                           |  | 15~35℃               |  | 湿度          |  | 45~75% |  | 大气压力       |  | 86~106 KPa  |  |
| 定位器         |  | 6DR5010                                      |  | 其他附件         |  |                      |  |           |  |                                              |  |                      |  |             |  |        |  |            |  |             |  |
| 信 号         |  | 理论行程 mm/°                                    |  | 测试行程 mm/°    |  | 回 差                  |  | 基本误差      |  | 检 验 项 目                                      |  | 标准值E类(电动2.5级)        |  | 不带定位器       |  | 带定位器   |  | 实测结果       |  |             |  |
| 0%          |  | 0                                            |  | 0            |  | 0                    |  | 0         |  | 1、基本误差                                       |  | ±5% (±2.5%)          |  | ±5% (±2.5%) |  | ±1%    |  | 合格         |  |             |  |
| 25%         |  | 10                                           |  | 10.1         |  | 0.70%                |  | 0.5%      |  | 2、回差                                         |  | 3% (2%)              |  | 3% (2%)     |  | 1%     |  | 合格         |  |             |  |
| 50%         |  | 20                                           |  | 20.1         |  | 0.70%                |  | 0.20%     |  | 3、死区                                         |  | ±2.5%/5%             |  | ±2.5%/5%    |  | 0.4%   |  | 合格         |  |             |  |
| 75%         |  | 30                                           |  | 30.2         |  | 0.70%                |  | 0.50%     |  | 4、始点偏差                                       |  | ±5%/2.5%             |  | ±5%/2.5%    |  | ±1%    |  | 合格         |  |             |  |
| 100%        |  | 40                                           |  | 40.2         |  | 0.50%                |  | 0.50%     |  | 5、终点偏差                                       |  | 2.5%                 |  | 2.5%        |  | ±1%    |  | 合格         |  |             |  |
| 死 区         |  | 信 号                                          |  | 信号增大         |  | 信号减小                 |  | 死 区       |  | 6、额定行程偏差                                     |  | 35mL/min             |  | 35mL/min    |  | 2.5%   |  | 合格         |  |             |  |
| 25%         |  | 8.1                                          |  | 8.0.5        |  | 8.0.5                |  | 0.60%     |  | 7、实测泄漏量                                      |  |                      |  |             |  |        |  | 合格         |  |             |  |
| 50%         |  | 12.08                                        |  | 12           |  | 12                   |  | 0.5%      |  | 8、耐压强度: 阀腔输入1.5MPa水压, 3min内无肉眼可见的渗漏现象。       |  |                      |  |             |  |        |  | 合格         |  |             |  |
| 75%         |  | 16.1                                         |  | 16.05        |  | 16.05                |  | 0.6%      |  | 9、填料及连接处密封性: 输入1.1MPa水压, 3min内无渗漏现象。         |  |                      |  |             |  |        |  | 合格         |  |             |  |
| 试 验 介 质     |  | 清洁蒸馏水                                        |  | 时 间          |  | 3 min                |  | 545mL/min |  | 10、气密密封性: 气室(缸)输入0.35MPa, 5min内压降≤2.5(5)Kpa。 |  |                      |  |             |  |        |  | 合格         |  |             |  |
| 泄 漏 量       |  | 试 验 压 力                                      |  | 最大           |  | 泄 漏 量                |  | 合格        |  | 11、外观: 表面光洁完好, 无缺陷, 紧固件无松动等现象。               |  |                      |  |             |  |        |  | 合格         |  |             |  |
| 阀体装配: 王士楠   |  | 压力测试: 王士楠                                    |  | 整机调试: 王士楠    |  | 终 检 结 论              |  | 合格        |  | 终检责任人: 李磊                                    |  | 生产日期: 2025 年 4 月 2 日 |  |             |  |        |  |            |  |             |  |
| 执行机构装配: 郑海嘉 |  |                                              |  |              |  |                      |  |           |  |                                              |  |                      |  |             |  |        |  |            |  |             |  |

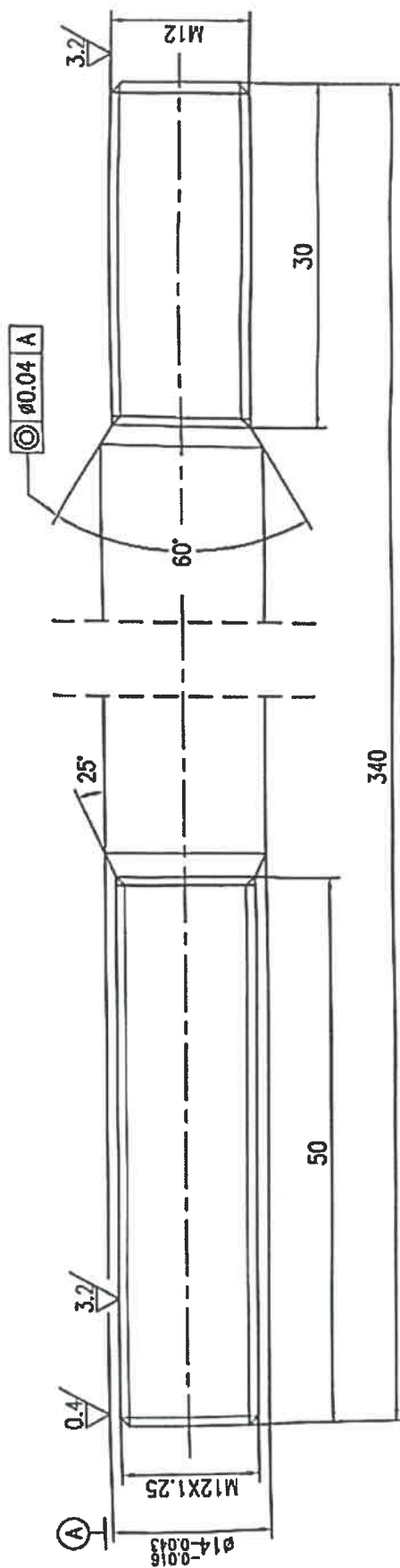
\*\*\*报告结束\*\*\*

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

TÜVRheinland®

inspected reviewed witnessed

6.3/



浙江喜鹊密封件有限公司

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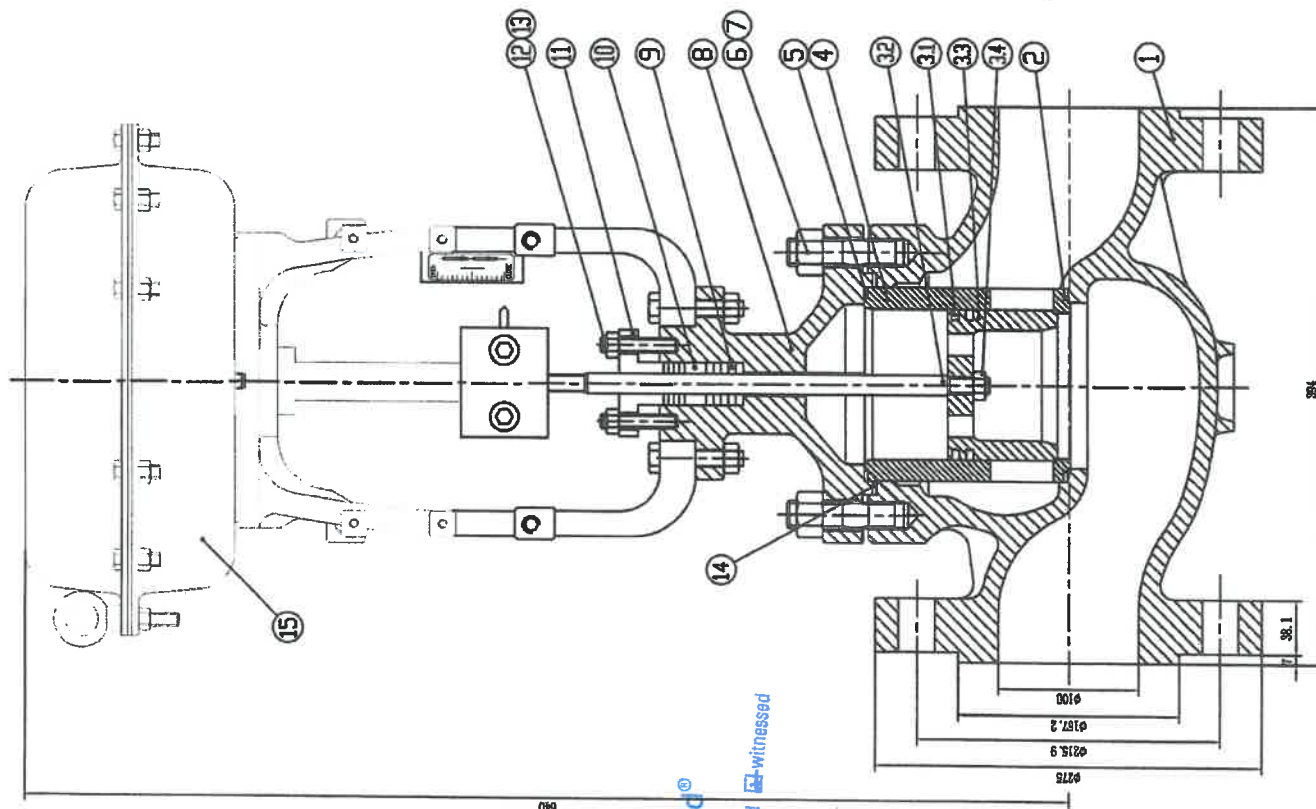
[illegible]

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| 借通物件登記 |
| 插图     |
| 技措     |
| 田底图总号  |
| 签字     |
| 日期     |

## Technical Requirements

1. The equipment shall be designed and manufactured in accordance with GB/T 12224-2005 "Steel Valves General Requirements" and referenced to ASME B16.34-2009.
2. Face-to-face dimensions of flanges shall comply with ISA S75.03-1992.
3. The equipment shall be inspected and accepted per GB/T 4213-2008 "Pneumatic Control Valves" and referenced standards such as FC 70-2-2006.
4. After assembly of the valve section, a "Flow Direction Plate" shall be affixed to the F-direction position of the valve body as per the flow direction requirements.

[illegible]