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检测
TESTING
CNAS L11390

检测报告

Test Report

报告编号

Report No. ROCKB202103008-2

产品名称
Product Name

石墨填料 M600S
Graphite Packing M600S

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 4 月 6 日
April 6, 2021

试验结束日期
Date Finished

2021 年 4 月 16 日
April 16, 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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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.

邮政编码 Post code: 325000

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概述 Summary:

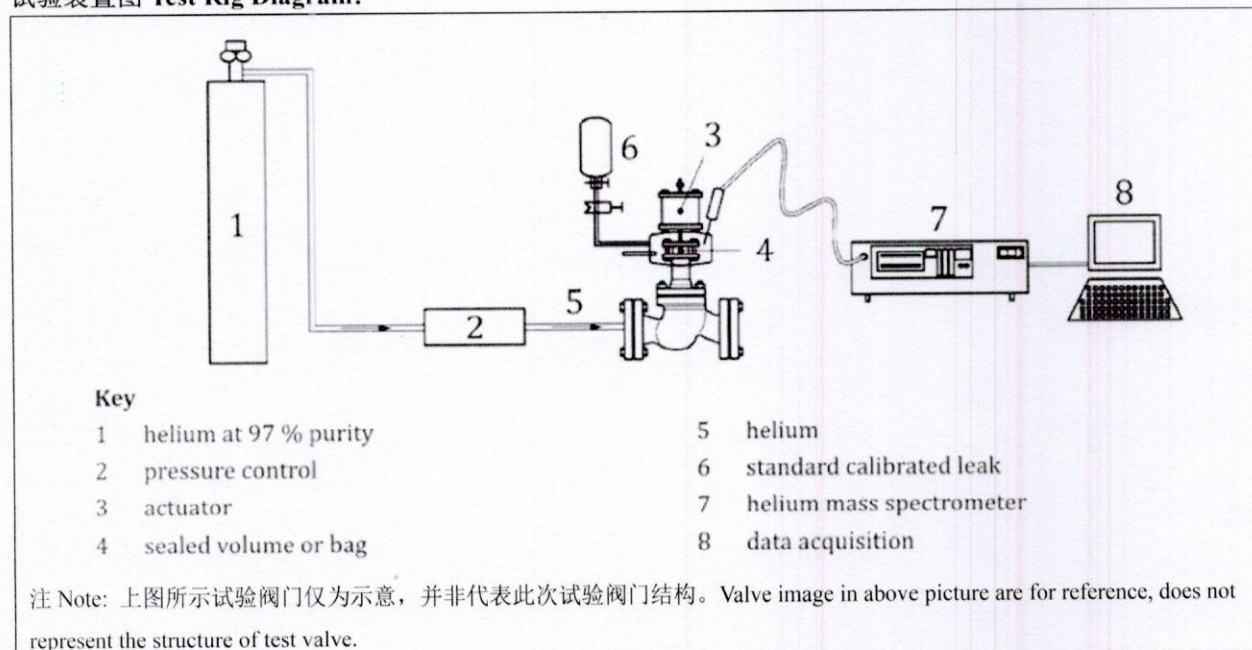
填料厂家 Manufacturer	浙江喜鹊密封件有限公司 Zhejiang Magpie Sealing Element Co., Ltd.		
填料描述 Description	石墨填料/6个带金属丝加强编织石墨圈 Graphite packing/ 6 nos. of metal-wire-reinforced braided graphite rings		
填料材料 Material	石墨 Graphite	填料型号 Model No.	M600S
阀杆运动方式 Stem Motion	升降 Rising	测试时阀杆朝向 Stem Orientation During Test	垂直 Vertical
抽样方 Selected by	厂家 Manufacturer	送样日期 Collected Date	2021.04.05
样品编号 Sample No.	ROCKP202103008-2	样品状态 Sample status	完好 Intact
阀门尺寸/压力/类型 Valve Size/Rating/Type	12" CL900 闸阀 12" CL900 Gate Valve	阀门产品系列号 Valve Product SN	K20030103-1
总装图号 GA Drawing No.	A12DZr540Y-CL900 RF -00	设计标准 Design Standards	GB/T 12234
阀杆运动方式 Stem Motion	升降 Rising	执行器类型 Actuator type	手动 Manual
阀体材料 Body Material	ASTM A351 CF8	阀体密封描述 Body Seal Description	金属椭圆垫环 Metal Oval Ring
阀杆材料 Stem Material	ASTM A276 304	阀杆直径 Stem Diameter	Φ 65mm
阀杆密封描述 Stem Seal Description	石墨填料 Graphite Packing	炉号 Heat No.	L0515 (阀体 Body) L0515 (阀盖 Bonnet)
试验标准 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 第1部分: 用于阀门型式试验的分级体系和鉴定程序 DIN EN ISO 15848-1: 2017-07 Industrial valves – Measurement, test and qualification procedures for fugitive emissions – Part 1: Classification system and qualification procedures for type testing of valves		
试验场地 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 ROCK Valve Testing Lab, Heyi Industrial Zone, Oubei, Yongjia, Zhejiang, PRC		
检测项目 Test Item	密封性能试验 Sealing Performance	试验介质 Test medium	99.999% 氦气 99.999% Helium
阀门性能等级 Performance Class	ISO FE BH – CO1 – SSA0 – t-196°C – CL900 – ISO15848-1		
试验结论 Test Conclusion	阀门是否通过试验要求? Did valve pass test requirements? 是 YES		

编制/日期: 陈克泽 2021.04.19 审核/日期: 胡林 2021.4.19 批准/日期: 2021.4.19
 PRPD/DATE: 2021.04.19 CHKD/DATE: 2021.4.19 APPD/DATE: 2021.4.19

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

阀杆密封描述 Stem Seal Description		石墨填料 Graphite Packing		
填料参数 Packing Parameter	厂家 / 型号 (若有) Mfr. / Model (if have)	浙江喜鹊密封件有限公司 / M600S Zhejiang Magpie Sealing Element Co. Ltd. / M600S		
	填料材料 Packing Material.	石墨 Graphite	填料圈数 Ring Qty.	6
	尺寸(内径×外径×总高) Size (ID×OD×TH)	φ 65mm× φ 90.4mm×76.2mm		
	填料压盖螺母拧紧扭矩 Gland Bolt Tightening Torque	240 N•m		
阀体密封描述 Body Seal Description		金属椭圆垫环 (ASME B16.20) Metal Oval Gasket Ring (ASME B16.20)		
垫片参数 Gasket Parameter	厂家 / 型号 (若有) Mfr. / Model (if have)	镇江阀门有限公司 Shenjiang Valve Co., Ltd.		
	材料 Material.	304SS 304SS	数量 Qty.	1
	垫片规格 Gasket Size	R61		
	螺栓拧紧扭矩 Bolt Tighten Torque	1600 N•m		
其它位置的密封设计及描述 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 Device Name	氦质谱检漏仪 He mass spectrometer	品牌/型号/系列号 Brand / Model / SN	Leybold / PHOENIX L300i / 90001197646
设备ID Device ID	J002	灵敏度 Sensitivity	5E-12 mbar•l•s ⁻¹
有效期 Validity	2022-03-03	/	/

试验条件 Test Conditions:

最大允许泄漏量 Maximum Allowable Measured Leakage	阀杆密封Stem seals ≤1.16E-04 mbar•l•s ⁻¹ 阀体密封Body seals ≤50 ppmv	试验压力/升温温度 Test Pressure / Elevated Temperature	14.48MPa@RT 14.48MPa@-196°C
总温度循环数 Total Thermal Cycles	2	总机械循环数 Total Mechanical Cycles	205

试验结果 Test Results:

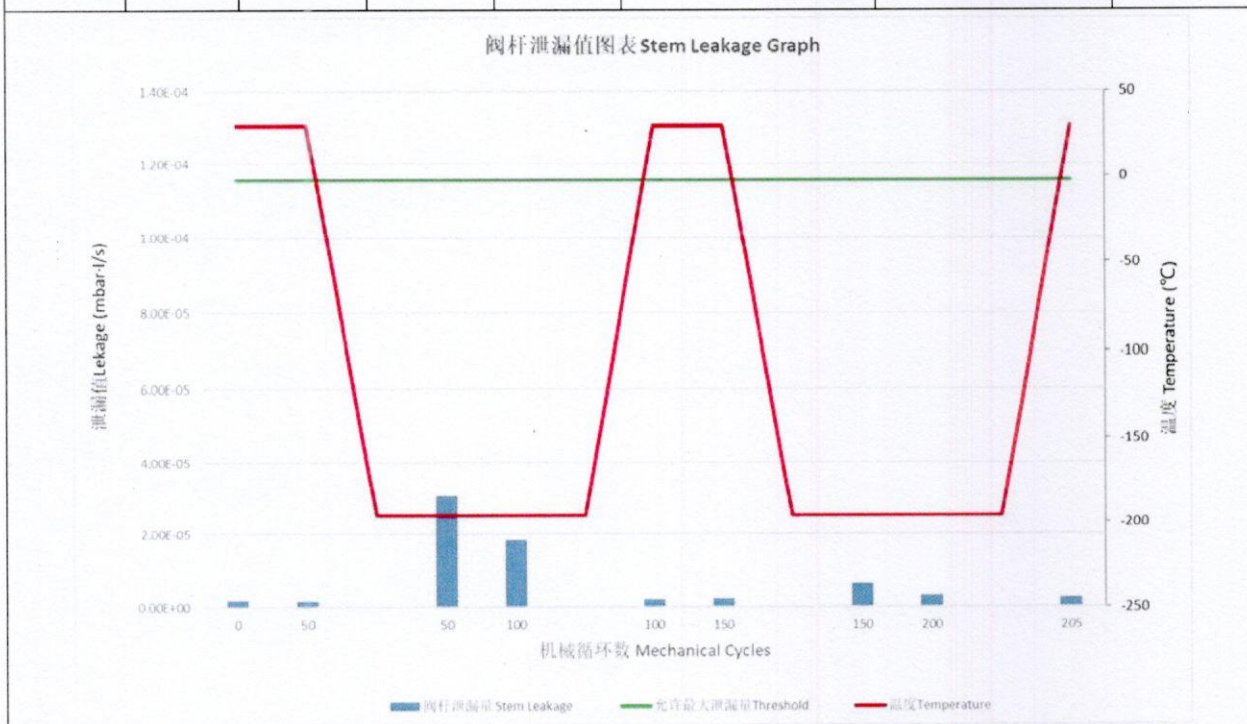
完成温度循环数 Number of Thermal Cycles Completed	2	完成机械循环数 Number of Mechanical Cycles Completed	205
阀杆处最大泄漏量 Maximum Leakage Through Stem, mbar•l•s ⁻¹	3.08E-05	阀体密封最大泄漏量 Max. Body Seal Leakage, ppmv	0.98
阀门泄漏量是否低于允许值? Was Valve Leakage Below Allowable?			是 YES

阀门操作扭矩 Valve Operating Torque:

第1次循环开启方向起始扭矩 (N•m) BTO @ 1 st cycle (N•m)	6.5
第1次循环关闭方向起始扭矩 (N•m) BTC @ 1 st cycle (N•m)	9.7
最后一次循环开启方向起始扭矩 (N•m) BTO @ last cycle (N•m)	6.9
最后一次循环关闭方向起始扭矩 (N•m) BTC @ last cycle (N•m)	7.3
齿轮箱齿比Gearbox Ratio	24.38:1
备注Remark: 记录扭矩为向齿轮箱手轮的输入扭矩。Recorded torque is input torque to gearbox handwheel.	

试验数据 Test Data:

循环数 Cycle Number	试验温度 Test Temperature			压力 Pressure MPa	阀杆净泄漏量 Net Stem Leakage mbar•l•s ⁻¹	阀体净泄漏 Net Body Leakage ppmv	判定 Evaluation
	TC1-°C	TC2-°C	TC3-°C				
0	RT	RT	RT	24.82	1.82E-06	0.65	合格 Pass
50	RT	RT	RT	24.82	1.63E-06	/	合格 Pass
50	-196	-196	6.8	24.83	3.08E-05	/	合格 Pass
100	-196	-196	4.3	24.83	1.84E-05	/	合格 Pass
100	RT	RT	RT	24.86	1.97E-06	/	合格 Pass
150	RT	RT	RT	24.86	2.26E-06	/	合格 Pass
150	-196	-196	4.5	24.82	6.18E-06	/	合格 Pass
200	-196	-196	4.6	24.82	3.14E-06	/	合格 Pass
205	RT	RT	RT	24.87	2.48E-06	0.98	合格 Pass



备注 Note:

- 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



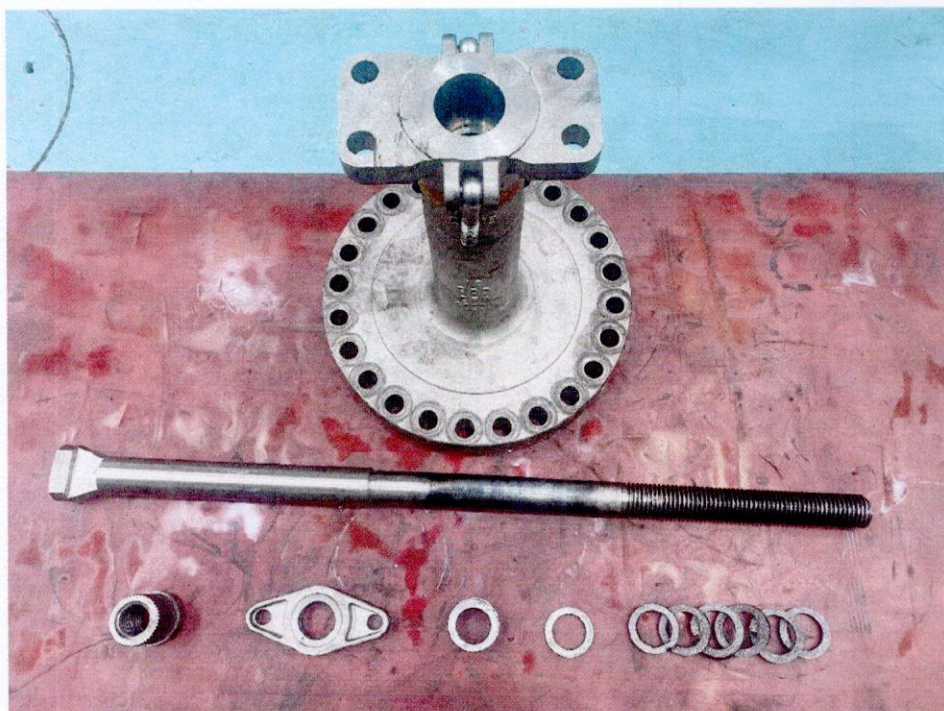
试验阀门 Tested valve



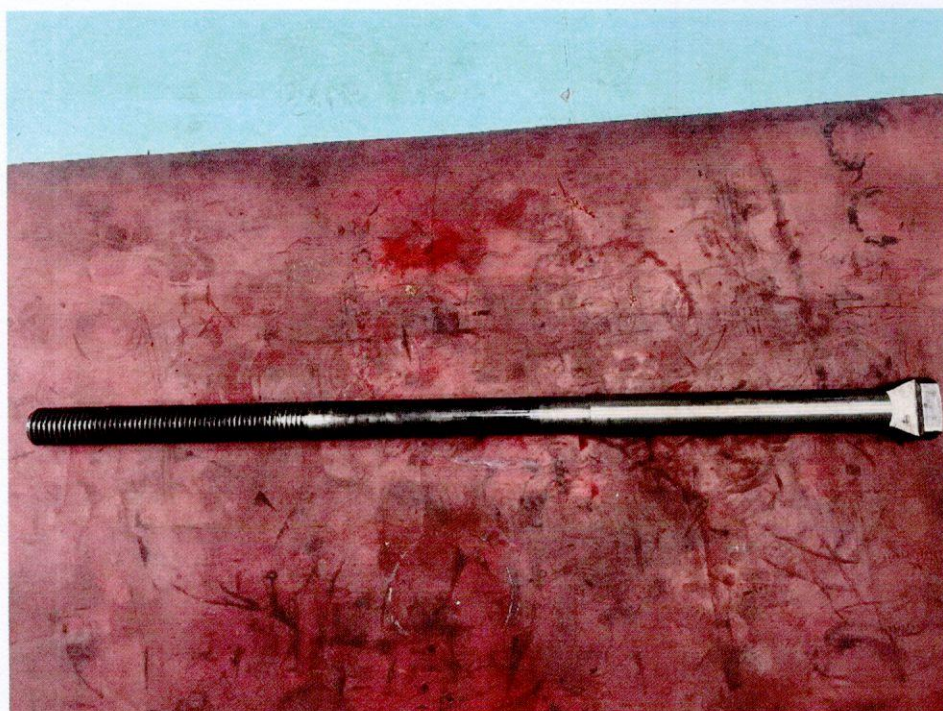
检漏设备 Leak detector

照片记录 Photographic Record

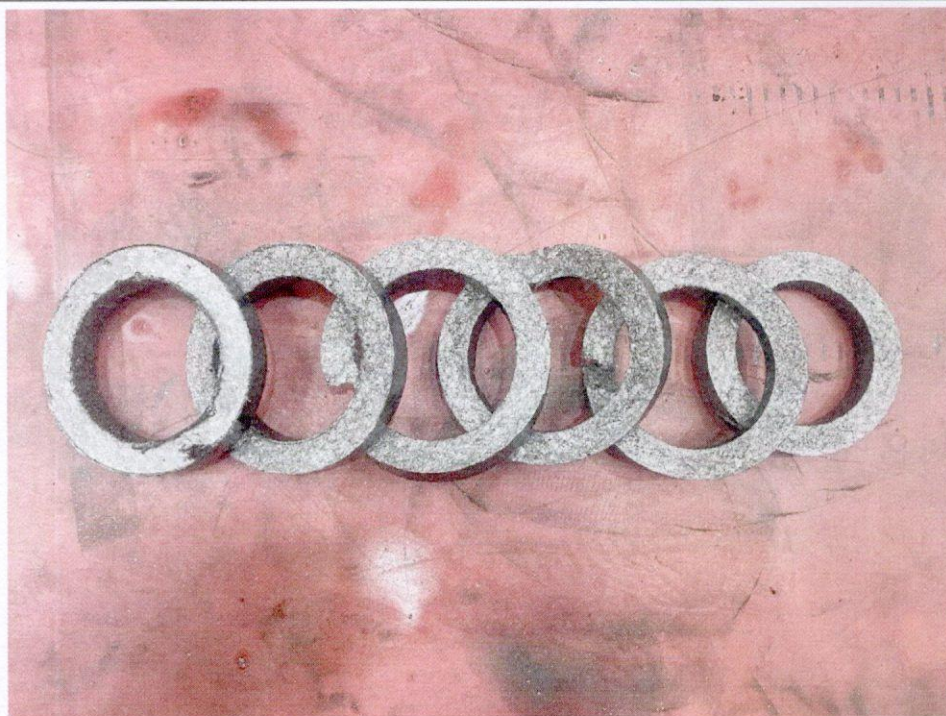
阀门拆解后零部件 Post-disassembly Valve Components



阀门拆解 Valve disassembly



阀杆 Stem



石墨填料 Graphite packing



填料压套 Packing gland



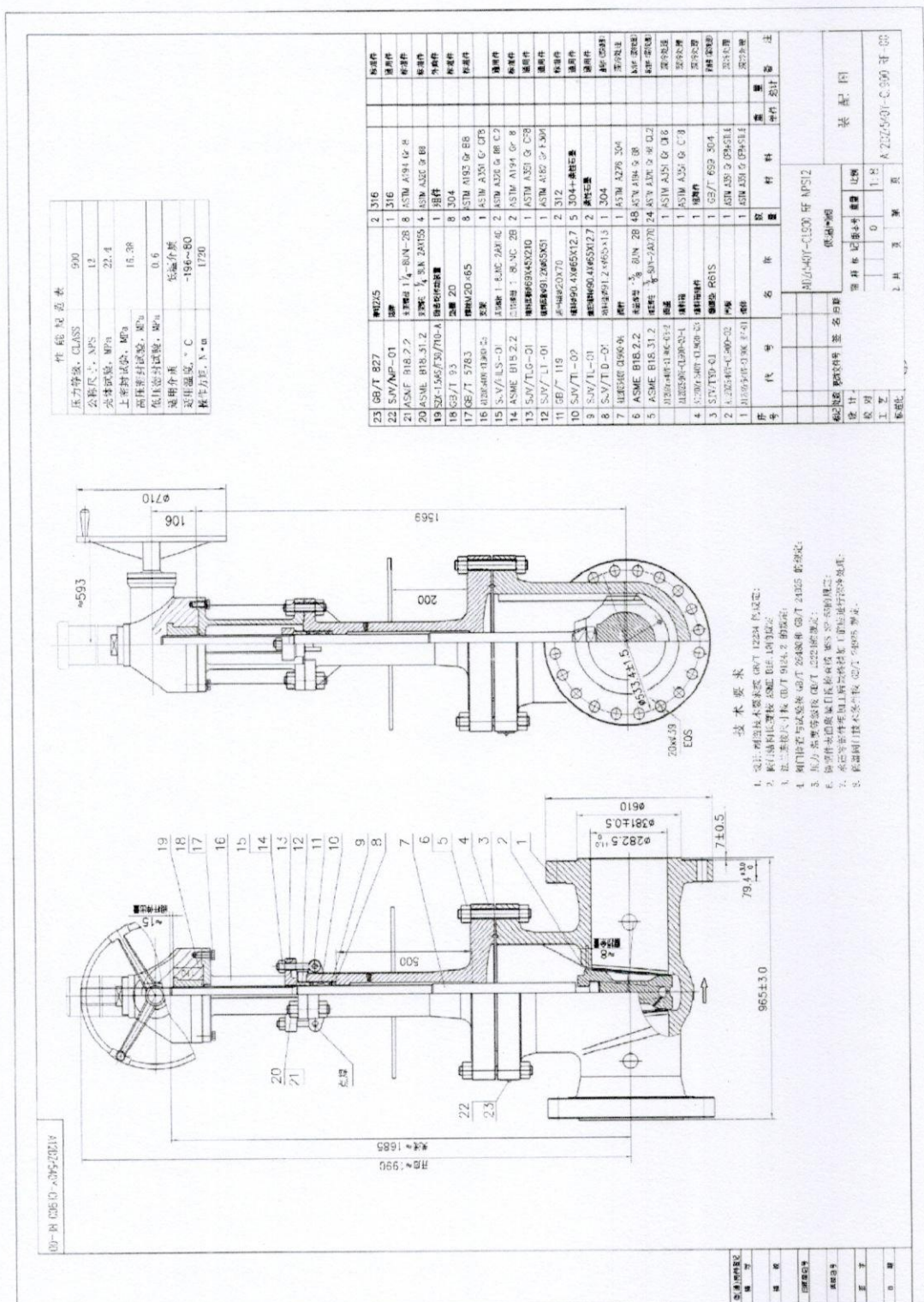
填料压盖 Gland flange



填料函 Packing sealing chamber

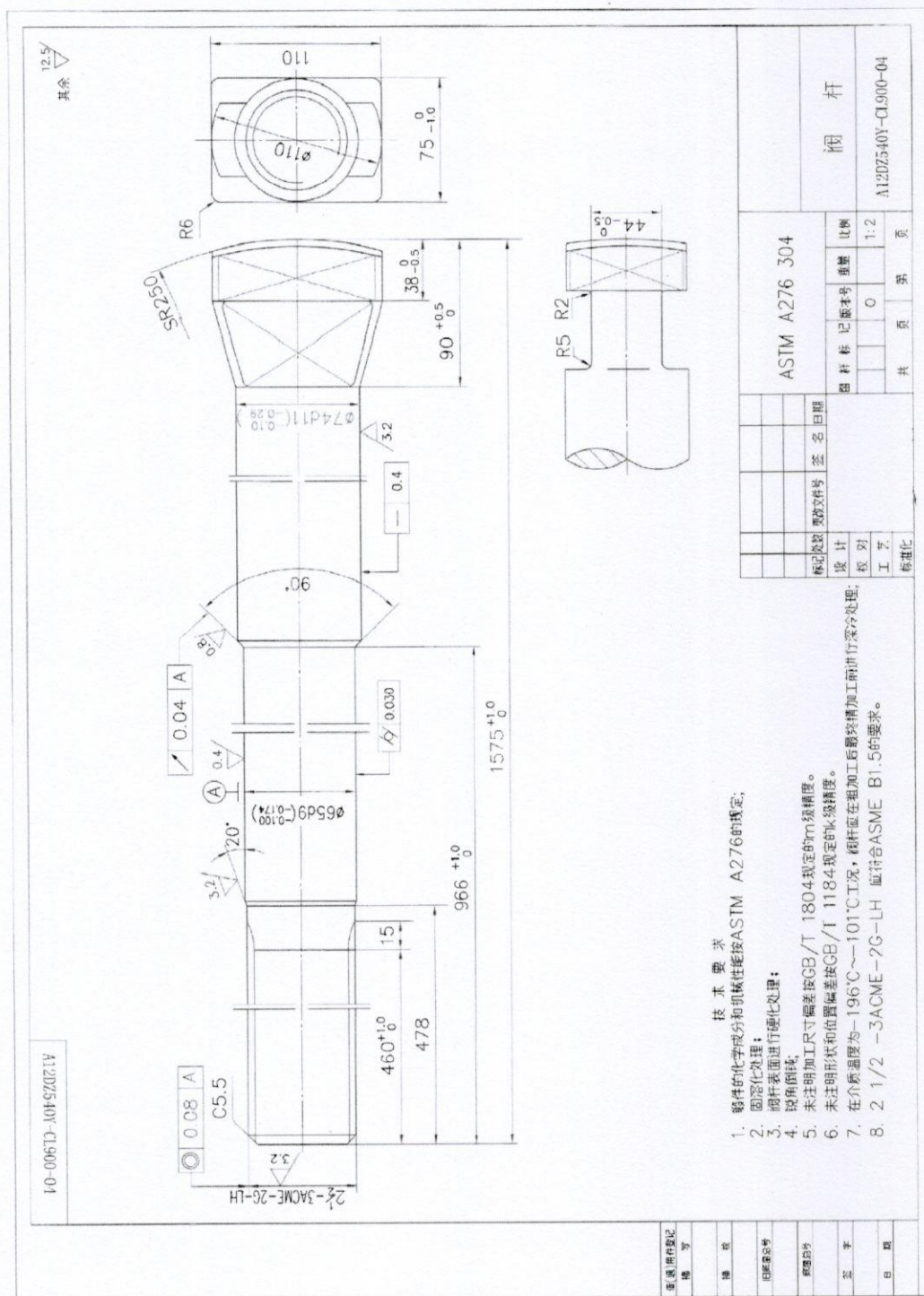
阀门图纸Valve Drawings

总装图 General Assembly



阀门图纸Valve Drawings

阀杆 Stem



报告结束

End of report