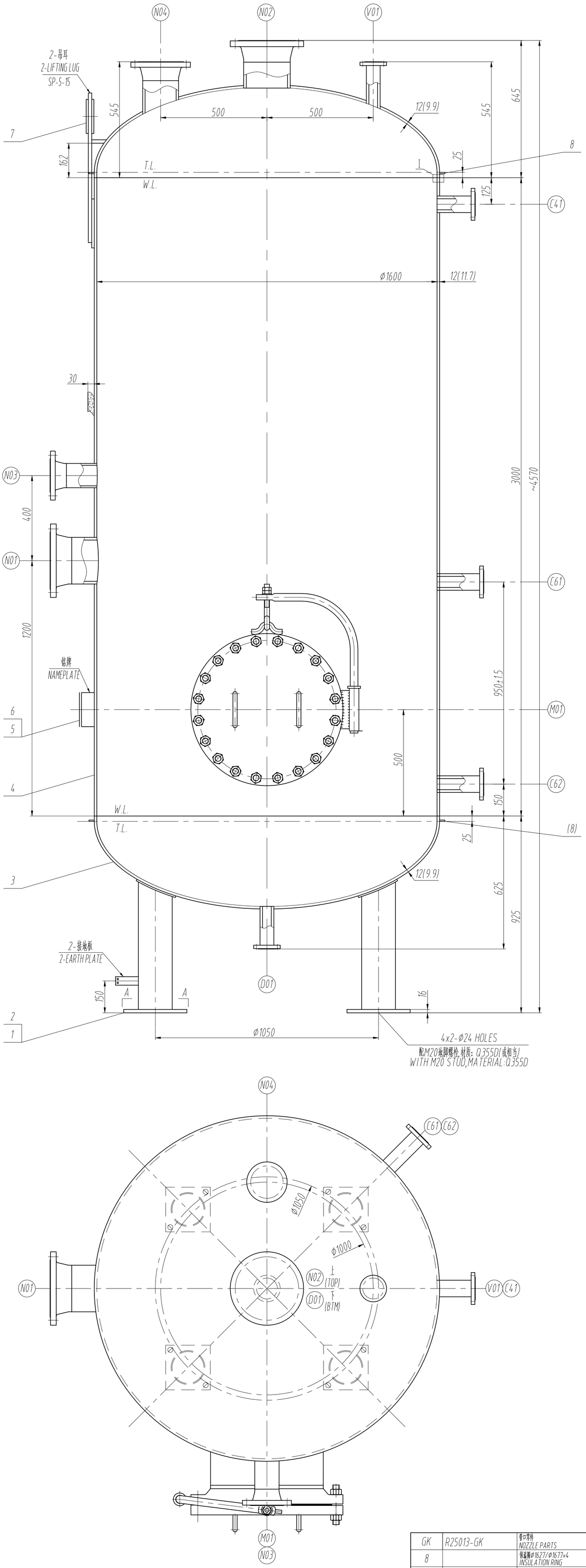

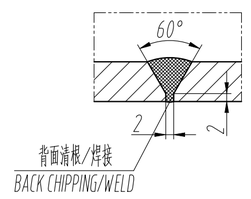

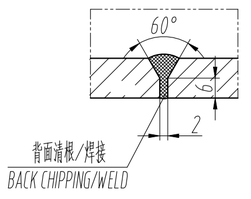

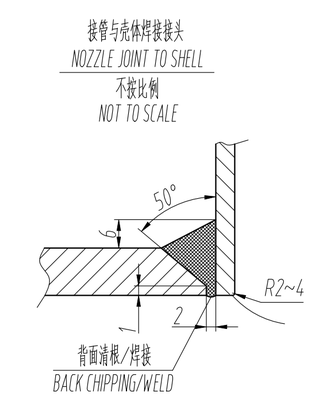

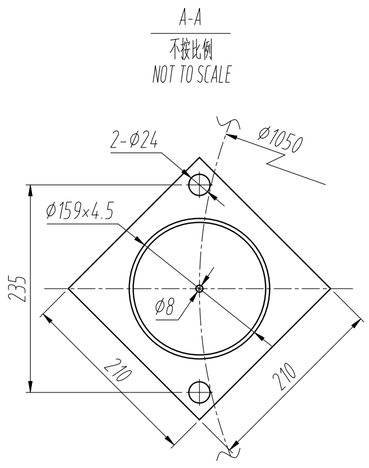

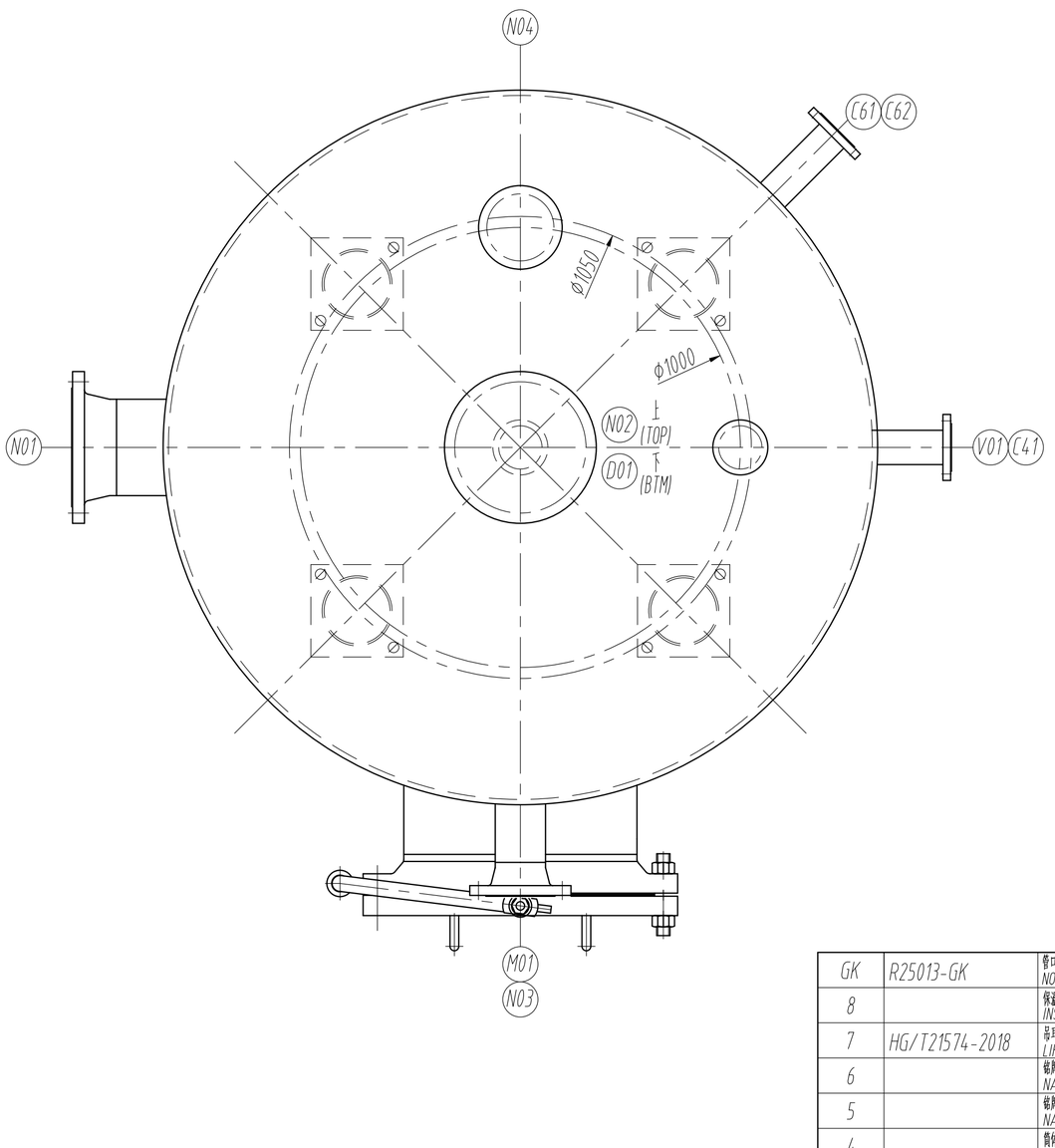

设计、制造与检验主要数据表
DESIGN/FABRICATION/INSPECTION DATA

规范、标准 CODE & STANDARD	《压力容器》GB/T 150.1-150.4-2024 PRESSUER VESSEL 《钢制化工容器制造技术规范》HG/T 20584-2020 TECHNICAL STANDARD OF FABRICATION FOR STEEL CHEMICAL VESSELS		
参数 PARAMETER		压力容器类别 PRESS VESSEL CLASS	/
工作压力 WORKING PRESS. kg/cm²G	0.5	焊接规程 WELDING SPEC.	NB/T47015-2023
设计压力 DESIGN PRESS. kg/cm²G	7.2/-1	焊接材料 WELDING MATERAL	Q245R: J427、H08A、ER50-6
最高允许工作压力 MAX ADMISSIBLE OPERATING PRESS. kg/cm²G	/		S30408&C.S: A312
工作温度 WORKING TEMP. ℃	50		
设计温度 DESIGN TEMP. ℃	100	焊接接头形式 WELDING STRUCTURE	除注明外按HG/T20583-2020规定的全焊透结构 EXCEPT FOR THE INDICATION, THE FULLY WELDED STRUCTURE ACCORDING TO HG/T20583-2020
介质(组分) FLUID (COMPONENT)	N2、H2(注1) N2、H2(NOTE1)	角焊缝腰高 THICK. OF FILLET WELD	除注明外取相焊件较薄板厚度 EXCEPT FOR THE SPECIFICATION, THE PHASE WELDED PARTS ARE THICKER THAN THE BOARD
介质(密度) FLUID (DENSITY) kg/m³	1.23(气) 1.23(GAS)	法兰与接管的焊接 WELDING BETW. PIPE AND FLANGE	除注明外按相应法兰标准 IN ADDITION TO THE NOTES, FOLLOW THE CORRESPONDING FLANGE STANDARDS
介质特性 FLUID PERFORMANCE	--/易爆 --/INFLAMMABLE	产品焊接试件 PRODUCT WELDED TEST COUPONS	
安全阀整定压力 THE SET PRESS.OF SAFETY VALVES kg/cm²G	7.0	热处理 P.W.H.T.	炉内整体热处理 INTEGRAL HEAT TREATMENT IN FURNACE
设计使用年限 DESIGN WORKING LIFE(YEARS)	10	其它 OTHERS	
主要受压元件材料 MAIN MATERIAL 牌号(状态) NAME	Q245R	其它 OTHERS	
主要受压元件材料 MAIN MATERIAL 标准 STANDARD	GB/T713.2-2023	油漆、包装、运输 PAINT, PACKAGING, TRANSPORTATION	NB/T10558-2021, 22150-00000-MC08
腐蚀裕量 CORR. ALLOW. mm	3.0	管口、支座等方位 NOZZLE ORIENTATION	按管口方位图 BY PIPE PORT ORIENTATION MAP
焊接接头系数 JOINT EFF. 筒体/封头	1.0/1.0		
耐压试验方法(压力/介质) TYPE OF PROOF PRESS TEST kg/cm²G	9.4/9.1(HYDRO-H/V)		
泄漏试验方法(压力/介质) TYPE OF LEAK TEST kg/cm²G	/		
容积 CAPACITY m³	7.2		
装量系数 FULL EFF.	/		
保温材料/厚度 INSULATION MATERIAL/THICKNESS mm	硅酸铝/30 ALUMINUM SILICATE BLANKET/30		
防火材料/厚度 FIRE PREVENTION/THICKNESS mm	/		

无损检测 N.D.E.	焊接接头类别 JOINT CATEGORY	检测率 %	方法-质量等级 QUALITY-CLASS	技术等级 TECH-CLASS	标准 STANDARD	备注 REMARK
A.B	筒体 SHELL	100%	RT-Ⅱ	AB	NB/T47013.2-2015	
A.B	封头 HEAD	100%	RT-Ⅱ	AB	NB/T47013.2-2015	
C.D.E	C.S	100%	MT-Ⅰ		NB/T47013.4-2015	

安装环境	月平均最低温度 MEAN MONTHLY MIN. TEMP	基本风压 REFERENCE WIND PRESS.	地震设防烈度 SEISMIC SPECIFICATION INTENSITY	场地土类别 SOIL TYPE OF THE SITE	室(内/外) DOOR (IN/OUT)	防爆等级 EXPLOSIVE-PROOFGRADE	接地要求 GROUNDING REQUIREMENT
	21 ℃	400 Pa	7(0.15g)	Ⅲ	/		接地 GROUNDING

补充技术要求:

Supplementary technical requirements:

1. 除注明外,所有尺寸单位为"mm",法兰螺栓孔应沿设备中心线或其平行线跨中均布。

1. Except as specified, all dimension units are "mm", and the flange bolt holes should be distributed along the center line of the equipment or its parallel lines.

2.设备用Q245R钢板应符合GB/T713.2-2023《承压设备用钢板和钢带》的规定,正火状态供货。

20锻件应按NB/T47008-2017《承压设备用碳素钢和合金钢锻件》中Ⅱ级规定进行制造、检验和验收。

20钢管应符合GB/T9948-2013《石油裂化用无缝钢管》的规定。无缝钢管的厚度负偏差不大于10%S(S为钢管厚度)。

2. The Q245R steel plate for equipment shall comply with the provisions of GB/T713.2-2023 "Steel plates and steel belts for pressure-bearing equipment" and shall be supplied in normalized state.

20 forgings should be manufactured, inspected and accepted in accordance with the Class II provisions of NB/T47008-2017 "Carbon Steel and Alloy Steel Forgings for Pressure-bearing Equipment".

20 steel pipes should comply with the provisions of GB/T9948-2013 "Seamless Steel Pipes for Petroleum Cracking". The negative deviation of the thickness of seamless steel pipes shall not exceed 10% S (S is the thickness of the steel pipe).

3.受压元件材料成品分析应控制P≤0.015%,S≤0.008%,碳当量CE=C+Mn/6+(Mo+Cr+V)/5+(Ni+Cu)/15≤0.43;材料(锻件和接管板厚大于20mm的钢板)应进行非金属夹杂物检测,应满足:A,B,C,D和Ds均不大于1.5级(包括细系级别和粗系级别);A+C类不大于2.0级,B+D+Ds不大于2.0级,且各类夹杂物总和不大于4.5级。

3. The finished product analysis of compressed component materials should be controlled to control P≤0.015%, S≤0.008%, and carbon equivalent CE=C+Mn/6+(Mo+Cr+V)/5+(Ni+Cu)/15≤0.43; materials (forgings and steel plates with thicknesses of pipe plates greater than 20mm) should be tested for non-metallic inclusions, which should meet: A, B, C, D and Ds shall not be greater than 1.5 (including fine and coarse levels), A+C shall not be greater than 2.0, B+D+Ds shall not be greater than 2.0, and the total of various inclusions shall not be greater than 4.5.

4.Q245R钢板应正火状态使用,逐张进行100%超声检测,符合NB/T47013.3-2023,T1级合格;20锻件逐件进行超声检测和磁粉检测,Ⅰ级合格。

4. The Q245R steel plate should be used in normalized state, and 100% ultrasonic testing will be performed one by one, complying with NB/T47013.3-2023, and passing the T1 grade; 20 forgings will be ultrasonic and magnetic powder testing will be performed one by one, and passing the Class I.

5. 焊材应采用低氢焊材,控制合水量和熔敷金属扩散氢合量,按批复验熔敷金属扩散氢含量≤5ml/100g.

5. The welding material should be made of low-hydrogen welding material to control the moisture content and the content of the deposited metal diffused hydrogen. According to the approval inspection, the content of the deposited metal diffused hydrogen ≤5ml/100g.

6.与工艺介质接触的焊缝应采用氩弧焊打底。

6. Welds in contact with the process medium should be baseped with argon arc welding.

7.A、B类焊接接头的焊缝余高不得大于1mm;所有焊缝应打磨平滑,角焊缝应凹形圆滑过渡,接管内径边角处应倒圆,圆角半径取接管厚度1/4或19mm两者中的较小值。

7. The residual weld height of Class A and B welded joints shall not be greater than 1mm; all welds shall be polished and smooth, the fillet weld shall be concave and smooth, the inner diameter of the pipe should be rounded, and the rounded corner radius shall be the smaller value of the pipe thickness 1/4 or 19mm.

8. 本设备应进行整体炉内热处理,热处理保温温度宜按上限。设备热处理后,母材、焊缝及热影响区的内外表面硬度≤200HB。所有预焊件应在热处理前与设备相焊,热处理后不得在设备上施焊,热处理还应符合GB/T30583-2014的要求。

8. This equipment should undergo heat treatment in the entire furnace, and the heat treatment insulation temperature should be subject to the upper limit. After the equipment is heat treated, the inner and outer surface hardness of the base material, weld and heat-affected zone is ≤200HB. All prewelded parts should be welded to the equipment before heat treatment. After heat treatment, they should not be welded on the equipment. The heat treatment should also comply with the requirements of GB/T30583-2014.

9. 设备内部应考虑良好的成型措施(应无划痕、缺口、积碳和腐蚀等缺陷),如内壁打磨等;设备制造过程中应保护受压元件表面,不得锤击、碰撞,除锈时应尽量避免材料表面硬度增加过大。

9. Good molding measures should be considered inside the equipment (no defects such as scratches, notches, carbon deposits and corrosion), such as grinding of the inner wall, etc.; during the manufacturing process of the equipment, the surface of the compressed component should be protected from hammering or collisions. When removing rust, try to avoid excessive increase in the surface hardness of the material.

10.筒体组焊完毕后,应按照GB/T150.4-2024的6.5.11条检查壳体的圆度。

10. After the cylinder assembly is welded, the roundness of the shell should be checked according to Article 6.5.11 of GB/T150.4-2024.

11.DN<250的接管与法兰的对接接头应按照NB/T47013.4(5)-2015进行100%磁粉(渗透)检测,合格级别不低于Ⅰ级。M01接管与壳体的焊接接头应按照NB/T47013.3-2023进行100%超声检测,合格级别不低于Ⅰ级。

11. The butt joints of the connectors of the DN<250 and the flange should be tested in accordance with NB/T47013.4(5)-2015, and the pass level shall not be lower than Level I. The welded joints of M01 connector and the shell should be 100% ultrasonic inspection in accordance with NB/T47013.3-2023, and the pass level shall not be lower than Level I.

12.设备在液压试验后,应将水倒底排净吹干。

12. After the hydraulic test of the equipment, the water should be thoroughly drained and blown dry.

注(Note):

1.介质组成(V%):H2:0~20,其余N2,水≤2。

1. Media composition (V%): H2:0~20, the remaining N2, water ≤2.

2.吊耳仅限空吊。

2. The hanging ears are only allowed to be empty.

3.设计使用年限不等同于实际使用年限,压力容器使用单位应根据装置的操作状态,对该设备进行定期和不定期检验,并确认实际寿命和设计寿命的符合性。

3. The design service life is not equal to the actual service life. The pressure vessel user unit should conduct regular and irregular inspections of the equipment according to the operating status of the device, and confirm the compliance of the actual life and design service life.

管口表 LIST OF NOZZLE

符号 ITEM	公称尺寸 NPS	公称压力 CLASS	连接标准 COND.STD.	连接法兰形式 TYPE	连接面形式 FACING	用途或名称 SERVICE	管子规格 NOZZLE SIZE	管轴线至设备中心线距离 PROJ.FROM C.L. TO F.F.	备注 REMARK
N01	8	150	ASME B16.5-2020	WN	RF	气体入口 VAPOR INLET	Ø219.1×12.55	1020	
N02	8	150	ASME B16.5-2020	WN	RF	气体出口 VAPOR OULET	Ø219.1×12.55	见图 SEE DRAW	
N03	4	150	ASME B16.5-2020	WN	RF	气体返回口 VAPOR RETURN	Ø114.3×8.9	1020	
N04	6	150	ASME B16.5-2020	WN	RF	安全阀口 PSV CONNECTION	Ø168.3×11.15	见图 SEE DRAW	
C41	2	150	HG/T20615-2009	LWN	RF	就地压力表接口(带法兰盖) PG CONNECTION(W/B)	Ø78×13	980	
C61/C62	2	150	HG/T20615-2009	LWN	RF	就地液位计接口(带法兰盖) LG CONNECTION(W/B)	Ø78×13	1020	
V01	1½	150	HG/T20615-2009	LWN	RF	气体返回口 VAPOR RETURN	Ø65×12	见图 SEE DRAW	
D01	1½	150	HG/T20615-2009	LWN	RF	排污口 DRAIN	Ø65×12	见图 SEE DRAW	
M01	20	PN16	HG/T21521-2014	WN	RF	人孔 MANHOLE	Ø530×12	按标准 AS PER CODE	

件号 PARTS. NO.	图号或标准号 DWG. NO. OR STD.NO.	名称 PARTS. NAME.	数量 Q'TY.	材料 MAT'L.	单重SINGLE/总重TOTAL MASS(Kg)		备注 REMARKS
GK	R25013-GK	管口零件 NOZZLE PARTS				367.8	
8		保温圈Ø1627/Ø1677×4 INSULATION RING	2	Q245R	5	10	
7	HG/T21574-2018	吊耳 SP-5-15 L=162 C=58 LIFTING LUG	2	Q235B/Q245R	26	52	标准图
6		铭牌支(A) NAMEPLATE HOLDER (A)	1	Q245R		1	标准图
5		铭牌 NAMEPLATE	1	S30408		/	
4		筒体DN1600×12(11.7) SHELL	1	Q245R(正火) Q245R(N)		1431	H=3000
3	GB/T25198-2023	封头EHA 1600×12(9.9) HEAD	2	Q245R(正火) Q245R(N)	270	540	
2	NB/T47065.4-2018	支座B3,h=577 SUPPORT	4	10,Q235B/Q245R	26	104	标准图
1		接地板 EARTH PLATE	2	S30408	0.55	1.1	标准图

设备自重(供货质量) NET MASS (Kg)	2500				
空质量 EMPTY MASS (Kg)					
操作质量 OPERATING MASS (Kg)					
盛水质量 MASS OF FULL WATER (Kg)	9700				
最大可拆件质量 MAX. REMOV. PART MASS (Kg)					

标记 MARK	处数 Q'TY.	更改文件号 CHANGE THE FILE NO.	签字 SIGN	日期 DATE

浙江诚泰化工机械有限公司 ZHEJIANG CHENGTAI CHEMICAL MACHINERY CO.,LTD

设计 DESIGN		循环压缩机进口缓冲罐 CIRCULATING COMPRESSOR INLET BUFFER TANK	总装配图 ASSEMBLY DRAWING
校核 CKD.			
审核 DISC APP.			
标审 CODE APP.			
工艺会签 PRO. SIGN			
批准 APPR.			

图号 DWG. NO.	R25013-00
项目 SECTION	印尼胖岛石化公司 PT PETRO OXO NUSANTARA 3万吨/年新戊二醇项目 30000 TPA NPG PROJECT
位号 ITEM NO.	V-2304
版次 REV.	A00
审查图(REVIEW PICTURE)	
比例 SCALE	1:10
第 张 OF 共 张	