

SPECIFICATION

Customer:	Specification NO.:	Dated:	Enquiry Ref:
客户	规范	日期	版本
NTC	040-00447S	26, Jan. 2024	D2

1.0 Technical Characteristics:

- 1.1 Tank Type** : 20' ISO full frame, UN portable T11 tank
- 1.2 Design regulations:** (For undated references, the latest edition of the referenced document (including any amendments) applies.) 设计规范: 对于未注明日期的规则, 以最新版本的规则 (包括任何修订) 为准
- Tank 罐体 : ASME VIII Div 1 (NCS) & EN 14025 where applicable
- Frame 框架 : CSC, ISO 1496/3(1CC)
- General 常规 : IMDG/ADR/RID/US DOT(CFR49)-UN Portable tank T11, RID/ADR-L4BN, UIC, TIR, TC
- 1.3 Classification Society** : LR
船级社
- 1.4 Capacity (Nominal: -1.5, +2%)容积** : 26,000 liters
- 1.5 Dimensions and Thickness**
厚度和尺寸
- Frame Dimensions : 6,058 mm long x 2,438 mm wide x 2,591 mm high
框架尺寸
- Tank Dimensions : ϕ 2414 mm (I/DA) x 6020 mm (L)
筒体尺寸
- Shell Calculated Thickness : 4.18 mm
筒体计算厚度
- Shell Corrosion : 0.42 mm
筒体腐蚀裕量
- Shell Manufacture Thickness : 4.6 mm
筒体制造厚度
- Head Calculated Thickness : 4.4 mm
封头计算厚度
- Head Corrosion : 0.2 mm D1
封头腐蚀裕量
- Head After Forming : 4.6 mm D1
封头成型厚度

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1.6 Products 介质 : General purpose liquids

1.7 Rating 额定值

Tare (Nominal: ±3%) 自重	: 3,860 kg / (8,510 lbs)	D2
Max. Payload 最大载重	: 32,140 kg / (70,855 lbs)	
Max. Gross 最大总重	: 36,000 kg / (79,365 lbs)	D
Stacking 堆码	: Stacking weight @216000 kg	D1
	堆码总重 216000kg	

1.8 Pressure and Temperature

Tank M.A.W.P	: 4.0 bar / 58.0 psi
罐体最大工作压力	
Tank Test Pressure	: 6.0 bar / 87.0 psi
罐体试验压力	
ADR Calculation pressure	: 4.0 bar / 58.0 psi
ADR 计算压力	
Tank External Pressure	: 0.41 bar / 5.9 psi
罐体外压	
Tank Design Temperature	: -40 °C to 130 °C
罐体设计温度	
Ambient Temperature	: -20 °C to 65 °C
环境温度	
Steam Tube M.A.W.P	: 4.0 bar / 58.0 psi
蒸汽管最大允许工作压力	
Steam Tube Test Pressure	: 6.0 bar / 87.0 psi
蒸汽管试验压力	

2.0 Material of Construction: 制造材质

2.1 Vessel Material 罐体材质

Shell 筒体	: SANS 50028-7:1.4402. Equivalent to 316L. Max. carbon content 0.03%. Cold rolled. SANS 50028-7:1.4402. 不锈钢 316L 最大含碳量 0.03%。冷轧钢板
Dished Ends 封头	: SANS 50028-7:1.4402. Equivalent to 316L. Max. carbon content 0.03%. Hot rolled. SANS 50028-7:1.4402. 不锈钢 316L 最大含碳量 0.03%。热轧钢板
Frame to Shell Material	: ASME SA240 304 or equivalent.
框架到筒体过渡材质	ASME SA240 304 或等效材质
Steam Tubes	: Duplex stainless steel S32101
加热管	双相钢

2.2 Baffle 防波板		
Quantity 数量	: Three 3 组	
Material 材质	: SANS 50028-7:1.4402. Equivalent to 316L. SANS 50028-7:1.4402. 不锈钢 316L	
Type 类型	: Welded V-Type V 型焊接式	D2
	Each set baffle consists of two panels, fitted right and left side, 每个防波板由两片组成, 左右安装。	
Coverage 覆盖率	: 70%	
2.3 Vacuum Stiffening Ring 加强圈	: Not fitted. 不安装	D2
2.4 Framework Material 框架材质	: SPA-H or equivalent. SPA-H 或等效材质	
2.5 Corner Castings 角件	: To ISO 1161, standard ISO castings. 按照 ISO 1161 提供标准 ISO 角件	
2.6 Non Destructive Examination 无损探伤	: Radiography: 射线探伤 Shell: spot (Including all 'T' Joints) 筒体: 局部 (包括所有 “T” 型接头) Ends: full (100%) 封头: 全部 (100%) Joint efficiencies: 焊接系数 Shell: 0.85(ASME VIII) / 0.8(EN 14025) 筒体: 0.85 (ASME VIII) / 0.8(EN 14025) Ends: 1.0 封头: 1.0	

3.0 Surface Finish and Cleaning: 表面处理和清洗

3.1 Surface Finish	
Shell 筒体	: Cold Rolled 2B Finish 冷轧 2B 板
Dished Ends 封头	: Polished internally to $Ra \leq 1.2 \mu m$ 内部打磨抛光至 $Ra \leq 1.2 \mu m$
Longitudinal Welds 纵向焊缝	: As welded 焊缝无需处理
Circumferential Welds 环向焊缝	: As welded but with 400mm ground flush and polished on bottom centre line 除罐底中心线 400mm 范围内进行打磨及抛光处理至 $Ra \leq 1.2 \mu m$, 其余焊缝无需处理

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Internal Nozzle Welds : As welded
内部管口焊缝 焊缝无需处理

3.2 Cleaning 清洗 : On completion of fabrication, the vessel's internal surface is degreased, pickled, passivated and neutralized. The opening points are sealed so that the tank is supplied clean and ready for use.
在完成制造过程中, 罐体的内部表面进行脱脂、酸洗、钝化和中和。开口位置需密封好, 使罐体保持清洁并准备好使用。
A Cleaning Certificate will be issued by JJAP and placed in document holder before ex-works.
出厂前由 JJAP 提供清洁报告, 并放置在文件盒中。

4.0 Tank Fittings: 阀件

4.1 Manlid 人孔 : **(2nd spillbox) (第二个溢流盒内)**
Supplier 供应商 : FV
Quantity 数量 : One 1 组
Dimension 尺寸 : ϕ 500mm ID
Description 描述 : Stainless steel, manlid open to 135° Max. from rear to front. 8 point brass alloy wing nuts, low profile with TIR.
不锈钢人孔从后向前打开 135°。人孔盖通过 8 只铜质回转螺母紧固, 颈圈式带海关封
Gasket 垫圈 : PTFE with EPDM core.
内含 EPDM 的复合 PTFE 密封圈
Dipstick and Bracket 液位计及支架 : Not fitted. 不安装

4.2 Safety Relief Valve 安全阀 : **(2nd spillbox) (第二个溢流盒内)**
Supplier 供应商 : FV
Dimension 尺寸 : 2.5"BSP(DN65)
Quantity 数量 : One 1 个
Description 描述 : Stainless steel, 4.4 bar pressure safety relief valve, without flame proof gauze.
不锈钢安全阀, 设定压力 4.4bar, 不安装防火网
Weld-in flange 法兰 : Fitted tangentially off center line, drilled/tapped - 6 x M10 on 105mm PCD.
凸缘切向安装, 凸缘上 6 个 M10 螺纹孔, 中心圆直径 105mm
Gasket 垫圈 : No applicable. 不安装

4.3 Safety Relief Valve	: (2nd spillbox)	
Provision	(第二个溢流盒内)	
安全阀备用口		
Supplier 供应商	: FV	
Dimension 尺寸	: 2.5”BSP(DN65)	
Quantity 数量	: One 1 组	
Description 描述	: Stainless steel, 2.5” weld-in flange complete with blank flange. 不锈钢 2.5 寸焊接法兰配盲盖	
Weld-in flange 法兰	: Fitted tangentially off center line, drilled/tapped - 6 x M10 on 105mm PCD. 凸缘切向安装, 凸缘上 6 个 M10 螺纹孔, 中心圆直径 105mm	
Gasket 垫圈	: Envelope PTFE.	
4.4 Spare Provision 备用口	: (2nd spillbox) (第二个溢流盒内)	B
Supplier 供应商	: FV	
Dimension 尺寸	: 2” (DN50) flanged.	
Quantity 数量	: One. 1 组	
Description 描述	: Stainless steel, 2” weld-in flange complete with blank flange. 不锈钢 2 寸焊接法兰配盲盖	
Weld-in flange 法兰	: Fitted horizontally on center line, drilled/tapped-4 x M16 on 125mm PCD and 4 x M16 on 120.4mm PCD. 凸缘水平安装, 凸缘上 4 个 M16 螺纹孔, 中心圆直径 125mm; 4 个 M16 螺纹孔, 中心圆直径 120.4mm	
Gasket 垫圈	: Envelope PTFE.	
4.5 Cleaning Hatch 清洗口	(1st, 3rd, 4th spillbox) (第一、三、四溢流盒内)	
Supplier 供应商	: FV	
Quantity 数量	: Three 3 组	
Dimension 尺寸	: ϕ 300mm ID	
Description 描述	: Stainless steel, lid open to 135° Max. from rear to front. 4 point brass alloy wing nuts, low profile with TIR. 不锈钢清洗口从后向前最大打开 135°。清洗盖通过 4 只铜质回转螺母紧固, 颈圈式带海关封	
Gasket 垫圈	: PTFE with EPDM core.	

- 4.6 Air Inlet 气相口** : **(4nd spillbox) (第四个溢流盒内)**
Supplier 供应商 : FV
Dimension 尺寸 : 1.5”BSP (DN40)
Quantity 数量 : One 1 组
Description 描述 : Stainless steel, ball valve with 1.5”BSP outlet. A dust cap connect outlet with a stainless steel chain.
 Tapped hole and plug fitted for future fitting of a pressure gauge. Gauge guard not fitted.
 不锈钢球阀, 1.5 寸外接接口。防尘帽连接外接接口和不锈钢链子
 预留压力表接口, 用于将来安装压力表。不安装仪表保护罩。
Weld-in flange 法兰 : Fitted tangentially off center line, drilled/tapped-4 x M10 on 103.5mm PCD.
 凸缘切向安装, 4 个 M10 螺纹孔, 中心圆直径 103.5mm
Gasket 垫圈 : No applicable.
 不安装
- 4.7 Top Discharge Provision 顶出料备用口** : **(4nd spillbox) (第四个溢流盒内)**
Supplier 供应商 : FV
Dimension 尺寸 : 3” (DN80) flanged
Quantity 数量 : One 1 组
Description 描述 : Stainless steel, 3” weld-in recessed flange complete with blank flange.
 Siphon tube retaining plate fitted.
 不锈钢 3 寸焊接法兰配盲盖
 安装虹吸管固定板
Weld-in flange 法兰 : Fitted horizontally on center line, dual drilled/tapped-6 x M12 on 168mm PCD and 4 x M16 on 160mm PCD.
 凸缘水平安装, 6 个 M12 螺纹孔, 中心圆直径 168mm; 4 个 M16 螺纹孔, 中心圆直径 168mm
Gasket 垫圈 : Envelope PTFE.
- 4.8 Bottom discharge 底出料口** : **(Bottom Cabinet) (底盒内)**
Supplier 供应商 : FV
Dimension 尺寸 : 3” (DN80) flanged
Quantity 数量 : One 1 组

Description 描述	: Stainless steel, 3" 45° FV highlift footvalve and 3" clamped butterfly valve connected with 3"BSP terminal connection and dust cap, held captive with a stainless steel chain. 不锈钢, 3", 45° highlift 脚阀连接 3"蝶阀, 连接 3"BSP 带链防尘盖。
Weld-in flange 法兰	: Weld-in flange, drilled/tapped-8 x M12 on 177.8mm PCD. 凸缘上 8 个 M12 螺纹孔, 中心圆直径 177.8mm
Gasket 垫圈	: Envelope PTFE.
Remote Control 遥控装置	: Footvalve complete with cable remote closure system. 安装遥控系统控制

5.0 Other Accessories:

5.1 Spillage Boxes 溢流盒

Quantity 数量	: Four 4 组
Description 描述	: 1 st spill box contains cleaning hatch. 第一个溢流盒包含清洗口。 2 nd spill box contains manlid, safety relief valve, relief valve provision and DN50 spare provision. 第二个溢流盒包含人孔、安全阀、安全阀备用口和 DN50 的备用口。 3 rd spill box contains cleaning hatch. 第三个溢流盒包含清洗口。 4 nd spill box contains air inlet, top discharge provision and cleaning hatch. 第四个溢流盒包含气相阀、顶出料预备口和清洗口。
Material 材质	: Stainless steel 不锈钢
Drain pipes 溢流管	: Each box is completed with DN25 PVC plastic drain tubes. 每个溢流盒连接 DN25 PVC 塑料溢流管。
Covers 盒盖	: Not fitted.不安装
Remark 标记	: Fittings identified with stainless steel label plates. 安装不锈钢标

5.2 Bottom Cabinet 底盒

Quantity 数量	: One
Description 描述	: Bottom cabinet contains the bottom discharge assembly 底盒内包含底出料组件

Material 材质	: Stainless steel.不锈钢
Cover and Floor 盒盖和底板	: Not fitted.不安装
Remark 标记	: Fittings identified with stainless steel label plates. 安装不锈钢标

5.3 Heating Exchange System

加热系统

Ducts Quantity 数量	: 10 runs 10 道
Ducts' Material 材质	: Duplex stainless steel 双相钢
Inlet Diameter 进口	: 1" BSP
Outlet Diameter 出口	: 3/4" BSP
End Cap 防尘罩	: Stainless steel with chains.不锈钢, 配绳链
Description 描述	Inlet and outlet connection positioned on the left hand side of the rear end frame bottom cross member, fitted with caps. Outlet pipe fitted with 3/8" depressurization ball valve. 进口和出口位于后端下梁左侧, 安装防尘罩。出口管安装 3/8"排水球阀。
Remark 标记	: Connections identified with decal. 接口处粘贴指示标

B

5.4 Top Longitudinal Member

顶侧梁

: Top longitudinal rectangular members connected the front and rear end frame top corner castings.
矩形顶侧梁安装在前后端框的顶部角件之间。

5.5 Bottom Longitudinal Member

底侧梁

: Bottom longitudinal I-beam members connected the front and rear end frames, above bottom corner castings.
底侧梁工字钢安装在前后端框之间。位于底角件上方。

5.6 Miss Stacking Protection

堆码保护

Top 顶部

: Miss-stacking corner plates fitted adjacent to top corner castings.
在顶部角件附近安装顶角加强板。

Bottom 底部

: Bottom cross-members recessed adjacent to corner castings.
底横梁靠近角件处有避开槽。

5.7 Walkway 步道

Width 宽度

: 475mm and 400mm

Material 材质

: Aluminum 铝制

Type 类型

: Full type 满步道

Description 描述

: Full platform walkway, consisting of full length left

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and right hand side longitudinal walkways, with area between closed by transverse walkways.

Two longitudinal walkway divided into three individual pieces for maintenance purpose.

满步道平台由左右纵向步道和横向步道组成。

两个纵向步道分成三个独立部分，供维修之用

5.8 Handrail 扶手栏杆

Quantity 数量	: One
High 高度	: 1000mm
Material 材质	: Stainless steel 不锈钢
Type 类型	: Collapsible 可折叠的
Description 描述	: Fitted to right hand side of longitudinal walkway. Bolted fasteners to be tack welded to prevent theft. 安装于纵向步道右手边。 螺栓固定、点焊以防被偷。

5.9 Ladder 爬梯

Quantity 数量	: One
Width 宽度	: 300mm.
Material 材质	: Stainless steel 不锈钢
Description 描述	: Fitted to rear end right side. Bolted fasteners to be tack welded to prevent theft. 安装与后端框右手边。 螺栓固定，且点焊以防被偷。

5.10 Insulation 保温

Material 材质	: Rockwool
Barrel 筒体处	: 50mm Rockwool, where possible. 在可能的地方 50mm 厚岩棉。
Ends 封头处	: Rockwool, thickness to suit for the shape of end. 岩棉，厚度适合封头形状
Under the cladding overlap 外包搭接下面	: PU foam.
Cladding 外包	: 1.2mm thk. glass reinforced plastic over barrel, overlap joints sealed. 2.0mm thk. glass reinforced plastic over ends. Color: white (RAL 9010) 筒体保温外表面覆盖 1.2mm 厚 GRP，采用搭接； 封头保温外表面覆盖 2.0mm 厚 GRP。 颜色：白色（RAL 9010）

5.11 Earth Connection 接地板

Quantity 数量	: One
Material 材质	: Stainless steel 不锈钢

- | | |
|--------------|---|
| Dimension 尺寸 | : 40 x 30 x 3mm with φ9 mm hole |
| Position 位置 | : One fitted to rear bottom cross member, adjacent to the ladder.
安装于后端下梁上，靠近爬梯。 |
- 5.12 Document Holder 文件盒**
- | | |
|--------------|--|
| Quantity 数量 | : One |
| Material 材质 | : Plastic 塑料 |
| Dimension 尺寸 | : Ø110mm x 310mm |
| Position 位置 | : Fitted to inside of the right hand side longitudinal member, adjacent to the rear corner post.
安装在右侧底侧梁上，靠近角件处。 |
- 5.13 Thermometer 温度计**
- | | |
|----------------|--|
| Quantity 数量 | : One |
| Description 描述 | : Dual scales contact type analogue thermometer with two stainless steel protection bars, range from -40°C to +160°C and -40°F to +320°F.
接触式摄氏和华式双显示温度计，量程-40℃到+160℃（-40°F到+320°F），采用两根不锈钢防撞杆。 |
| Position 位置 | : Rear end left hand side.
安装在后端左侧。 |
- 5.14 Data Plate 铭牌**
- | | |
|----------------|--|
| Quantity 数量 | : One. |
| Material 材质 | : Stainless steel |
| Description 描述 | : Data to code requirements indicate applicable UN Portable instruction.
铭牌体现适用罐箱 UN 相关参数和认证。 |
| Position 位置 | : Rear end left hand side.
安装在后端左侧 |
- 5.15 Calibration 容积标牌**
- | | |
|--|---|
| | : One stainless steel calibration plate marked in cm/litres will be tack welded to the inside neck of the manlid spill box.
蚀刻不锈钢容积表，单位厘米/升，焊接于人孔溢流盒侧内壁颈部。 |
|--|---|
- 5.16 Statutory Decals 法定标识**
- | | |
|--|--|
| | : Supplied and fitted by manufacturer.
由制造厂提供并安装。 |
|--|--|
- 5.17 Owner Logos 箱主标识**
- | | |
|--|--|
| | : Supplied and fitted by manufacturer.
由制造厂提供并安装。 |
|--|--|

6.0 Painting

- | | |
|--------------------------------|---|
| 6.1 Framework Treatment | : All carbon steel frame parts will be blast cleaned in |
|--------------------------------|---|

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框架处理

accordance with ISO 8501-1; 2007 SA 2½.
所有碳钢部分打砂等级为 ISO 8501-1:2007 SA 2½。

6.2 Painting of Frame 框架油漆

Primer Coat 底漆

: Epoxy zinc rich primer, 30 microns DFT.
底漆, 膜厚 30 微米。

Intermediate coat
中间漆

: Epoxy primer, 40 microns DFT.
中间漆, 膜厚 40 微米。

Top coat
面漆

: Polyurethane, 50 microns DFT.
聚氨酯漆, 膜厚 50 微米。

Total DFT
总干膜厚度

: 120 microns DFT.
总干膜厚度 120 微米

Color 颜色

: RAL 5010 蓝色

6.3 Vessel 罐体

: Anti-stress corrosion paint 40 microns DFT applied
wherever as deemed appropriate by manufacturer.
防腐蚀应力漆膜厚 40 微米。

MODIFY DESCRIPTION		
Revision Issue	Date	Description Of Revision
A	16, Jan.2019	New Drawing
B	21, Jan.2019	1. Item 4.4: Add one set DN50 spare provision. 2. Item 5.3: Change heating duct quantity to 10 runs.
C	04, Feb.2019	1. Item 1.7: Change the tare weight from 4140kg to 4230kg. 2. Item 2.2: Change baffles to removable V-Type. 3. Item 2.3: Add 3 off vacuum stiffening ring.
D	26, Apr.2021	Item 1.7: Change Max Gross to 36000kg. Change stacking weight to 213360kg.
D1	22, Nov.2023	1. Item 1.5: Change the thickness of dish head. 2. Item 1.7: Change tare weight from 4230kg to 4160kg. Change stacking weight to 216000kg.
D2	26, Jan.2024	1. Item 1.7: Change tare weight from 4160kg to 3860kg. 2. Item 2.2: Change baffles to Welded V-Type. 3. Item 2.3: Not fitted vacuum stiffening ring.

Compiled by: Patrick

Checked by: Anthony

Approved by: Robin