模块化密封系统选型手册
船舶、海洋工程及沿海设施

Manual for Selection of Modular Sealing System
Marine, Offshore and Coastal facilities

TESTECK 泰士特

安全 · 高效 · 品质

EFFICIENT SAFE AND QUALITY

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模块概述 OVERVIEW OF MODULES

模块化电缆/管道贯穿装置具备A-0、A-60级的耐火性能，可阻止压力级别的穿透，防护等级为IP68，能够阻止水、气体穿透密封的船舱，还具备降噪、耐腐蚀、衰减震动、振动冲击等性能。此外，特殊的电磁屏蔽模块（详见电磁屏蔽选型手册）具备防止EMI、EMP的能力，确保电气安全并防止电磁穿透，防爆型的模块可用于对应等级的防爆空间。

Equipped with fire-resistant performance of A-0 and A-60 levels, modular cable/pipeline penetration devices can prevent pressure level penetration, with a protection level of IP68, and can prevent water and gas from penetrating sealed cabins.They also have performance such as noise reduction, corrosion resistance, Attenuation and vibration, vibration and impact resistance. In addition, special electromagnetic shielding modules (detailed in the Manual for Selection of Electromagnetic Shielding) can prevent EMI and EMP, ensuring electrical safety and preventing electromagnetic penetration. Explosion proof modules can be used in corresponding explosion-proof spaces.
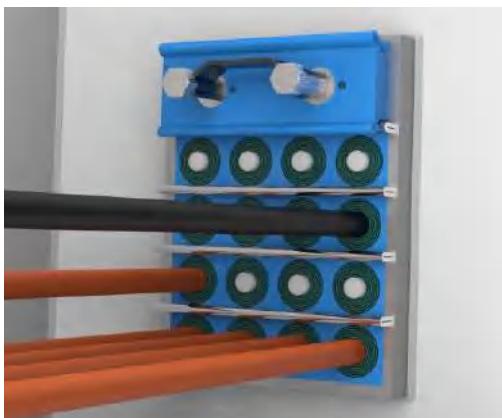
模块化的贯穿装置易于安装和使用，结构强度高，并可节省空间，具备变径功能，可适配各种规格的电缆或管道，并可根据设备升级需求预留备用空间，可重复拆装，满足未来扩容和升级的需求，为终端客户降低总费用。

The modular penetration device is easy to install and use, has high structural strength, and can save space. With the help of the variable diameter, the product can adapt to cables or pipelines of various specifications, and reserve spare space according to the needs of equipment upgrade. It can be repeatedly disassembled and assembled to meet future expansion and upgrade, reducing total costs for end customers.
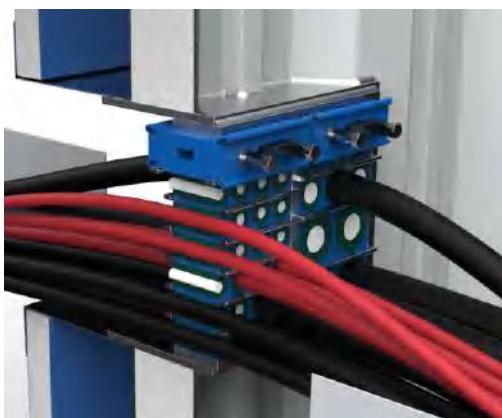
TESTECK可根据设计者或船厂的需求定制所需的密封件，如用于偏心管道、多根多规格管道贯穿舱壁或甲板时的防护。TESTECK的电缆/管道贯穿装置经过CCS认证、CCCF认证，并通过了船舶、轨道交通、建筑、石化等行业规定的测试。

TESTECK can customize the required sealing components according to the needs of designers or shipyards, such as for the protection of eccentric pipelines, multiple multi specification pipelines penetrating bulkheads or decks. TESTECK cable/pipeline penetration devices have been certified by CCS and CCCF, and have passed the testing required by industries such as shipbuilding, rail transit, construction, and petrochemical.

模块概述 OVERVIEW OF MODULES
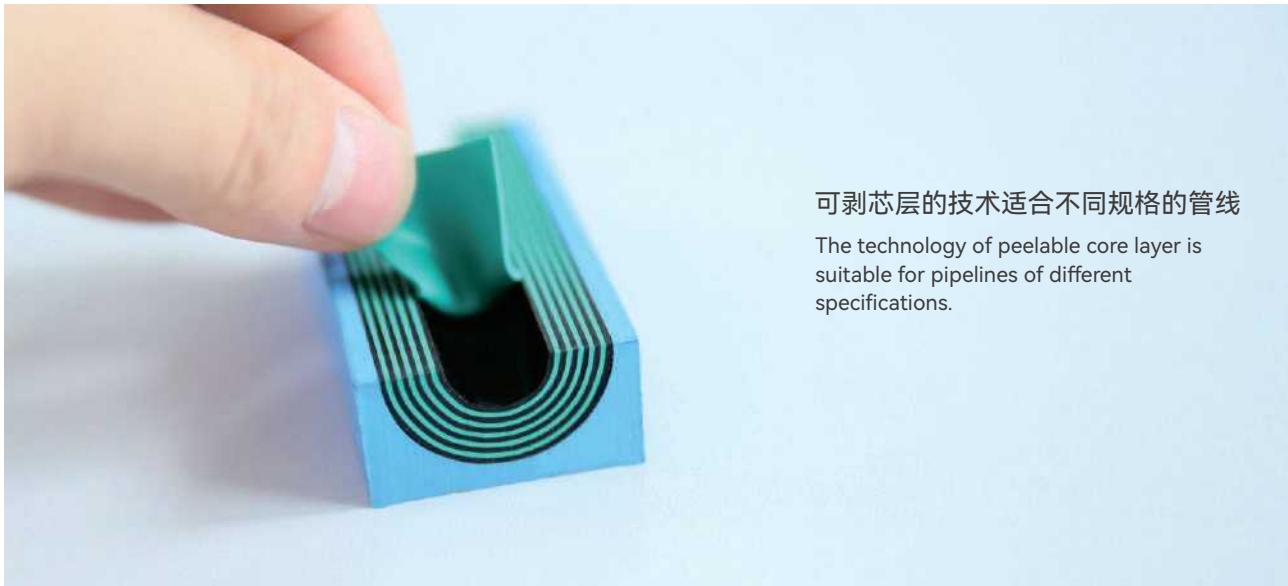
可剥芯层的技术适合不同规格的管线
The technology of peelable core layer is suitable for pipelines of different specifications.
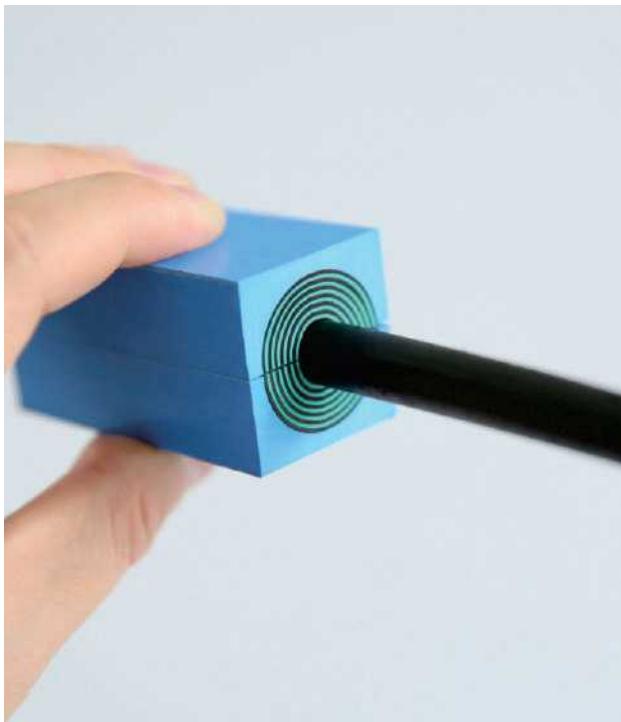
组合式结构，无须拆除管线方便后期改造
The combined structure does not require the dismantling of pipelines, facilitating later transformation.

系列标准规格的积木式组合模块，可适配任意尺寸的电缆或管道
The series of standard modular modules can be adapted to cables or pipeline of any size.

主要性能 MAIN PERFORMANCE

01.

耐火等级
Fire resistance rating

模块化密封系统满足(FTP规则)标准中A-0、A-60耐火等级：符合EN45545-2标准中火灾发生风险的危险等级HL3的要求:满足GB23864标准中2h的防火等级。

The modular sealing system meets the fire resistance ratings of A-0 and A-60 in the FTP rules standard, complies with the hazard level HL3 of fire occurrence risk in EN45545-2, as well as the 2h fire rating specified in GB23864.

02.

水密性能
Water tightness performance

可达到压力级别的密封，根据不同的型号，可满足0.01MPa~0.4MPa不同等级的压力密封。

Seals that can achieve pressure levels meet different pressure levels of 0.01MPa~0.4MPa according to different models.

03.

气密性能
Airtightness performance

可达到压力级别的密封，根据不同的型号，可满足0.01MPa~0.2MPa不同等级的压力密封。

Seals that can achieve pressure levels meet different pressure levels of 0.01MPa~0.2MPa according to different models.

04.

环境条件
Environment conditions

按照国际、欧标、国家标准通过了耐高温、耐低温、耐冲击振动、耐湿热、耐紫外线老化、耐臭氧老化、耐腐蚀等测试。

According to international, European, and national standards, the product has passed tests such as resistance to high temperature, low temperature, impact and vibration, humidity and heat, UV aging, ozone aging, and corrosion.

主要性能 MAIN PERFORMANCE
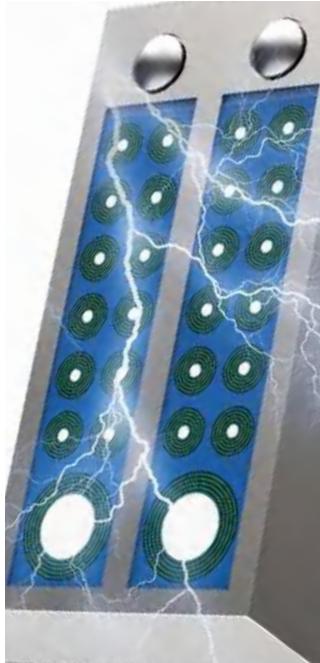
05.

电磁兼容性能
EMC

按照GB/T12190-2006《电磁屏蔽室屏蔽效能的测量方法》的要求在14kHZ~18GHz宽幅频率区间进行测试，其屏蔽效能为42~63dB

According to the requirements of GB/T12190-2006 Method for measuring the shielding effectiveness of electromagnetic shielding enclosures, the shielding effectiveness is tested in the wide frequency range of 14kHz~18GHz, with a shielding efficiency of 42~63dB.

06.

无毒、无卤
Non toxic and halogen-free

产品无毒安全，符合欧盟RoHS指令 2011/65/EU(RoHS 2.0)及其修正指令(EU)2015/863标准限用物质限量表中的规定；不含卤素，符合IEC 61249-2-21中卤素的限用标准

The product is non-toxic and safe, and complies with the EU RoHS Directive 2011/65/EU (RoHS 2.0) and the table of standard restricted substance limit in its amendments 2015/863 (EU); It contains no contain halogens and meets the limit standards for halogens in IEC 61249-2-21.
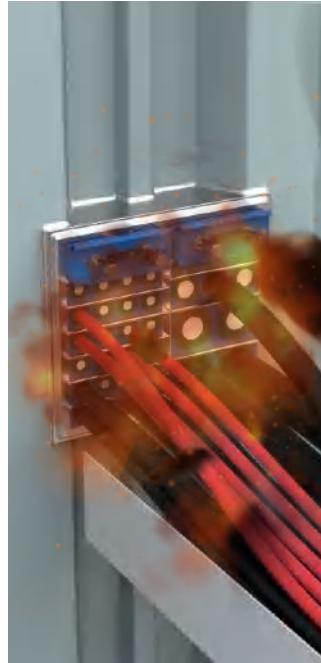
07.

防护等级
Protection level

按IEC 61373或GB/T 21563标准进行振动冲击后密封件能达到密封防护等级IP68。

After vibration impact according to IEC 61373 or GB/T21563 standards, the sealing element can provide a sealing protection level of IP68.

08.

防爆性能
Anti-explosion

满足IEC 60079《爆炸性环境》中Ex E IIC Gb和Ex E IIC Gc技术指标。

Meet the technical specifications of Ex E II C Gb and Ex E II C Gc in IEC 60079 Explosive Atmospheres.

产品应用 APPLICATION OF PRODUCT

经认证的电缆管道密封解决方案：
CERTIFIED CABLE DUCT SEALING SOLUTIONS

灵活应用于不同尺寸的电缆和管道
Flexible application for cables and pipelines of different sizes

内置备用容量，安装便捷，便于进行升级和改造
Built in backup capacity, easy to install, upgrade and retrofit

EMC 解决方案实现电气安全
EMC solutions for electrical safety

用于危险区域的防爆解决方案
Explosion proof solutions for hazardous areas

适用于铠装电缆的解决方案
Solution suitable for armored cables

可提供非焊接解决方案
Provide non welding solutions

可用于淡水、冷冻水和废水管道
Suitable for freshwater, chilled water, and wastewater pipelines

防护性能：
PROTECTION PERFORMANCE

防火	Fire prevention
水密	Water tight
气密	Airtight
防尘	Dustproof
降噪	Noise reduction
EMI/EMP	EMI/EMP

恶劣工况： 高温、低温、耐腐蚀、振动

冲击、紫外线老化、臭氧老化

Severe working conditions: high temperature, low temperature, corrosion resistance, vibration impact, UV aging, ozone aging.

空调
Air-conditioning

喷淋灭火系统
Fire sprinkler system

客舱区
Cabin area

水管
Water pipe

箱柜和机柜
Cabinets and cabinets
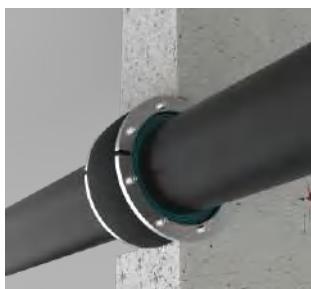
发动机室
Engine room

通信区
Communication area
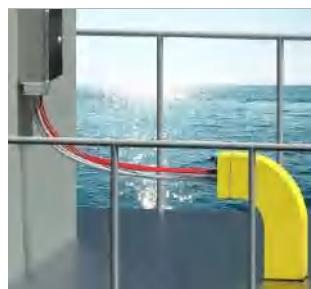
电源变电站
Power substation

产品应用 APPLICATION OF PRODUCT

邮轮和渡轮
Cruises and ferries

使用泰士特密封系统可随时根据需要方便地添加电缆、金属管道和塑料管道。这样的升级即使在巡航中也可操作，可有效降低总拥有成本。

The use of Testeck sealing system allows for easy addition of cables, metal pipes, and plastic pipes as needed at any time. This upgrade can be operated even during cruising, effectively reducing the total cost of ownership.

海军舰艇
Naval vessels

对海军舰艇而言可靠性是最关键的。泰士特EMC产品线不仅具有水密性和抗爆炸荷载性，还可提供对电磁威胁的防护，防止敏感电子元件和信号暴露于电磁环境。减振、节省空间以及塑料管道解决方案有助于降低整体重量、获得更多可利用空间并安静运行。

Reliability is most critical for naval vessels. Testeck EMC product line not only has water tightness and resistance to explosive loads, but also provides protection against electromagnetic threats, protecting sensitive electronic components and signals against the electromagnetic environment. Damping, space saving, and plastic pipeline solutions help reduce overall weight, gain more available space, and operate quietly.

产品应用 APPLICATION OF PRODUCT

商船和供应船
Merchant and supply vessels

船东使用泰士特密封系统确保其船舶常年可靠运行并保值，有益于升级，甚至有益于符合新技术和安全要求的船舶检验。在爆炸性危险区域，泰士特可提供经防爆(EX)认证的密封系统。

By using Testeck sealing system, shipowners can ensure the reliable operation and preservation of their ships throughout the year, which is beneficial for upgrading and even for ship inspections that comply with new technologies and safety requirements. In explosive hazardous areas, Testeck can provide explosion-proof (EX) certified sealing systems.

特种用途船舶
Special purpose ships

泰士特标准和定制化密封系统可用于从高精密侧推系统到水下作业设备、起重机的各种设备。可防止火、气体、水和振动等威胁，同时为船舶的升级做好准备，延长船舶的生命周期，并无需增加成本。

Testeck standard and customized sealing system can be used for various equipment from high-precision side thrust systems to underwater operation equipment and cranes. It can prevent threats such as fire, gas, water, and vibration, while preparing for ship upgrades and extending the ship's life cycle without increasing costs.

产品应用 APPLICATION OF PRODUCT

浮式生产储油轮
FPSO

泰士特电缆和管道密封系统提供了经认证的保护，可抵御气体、火、水、电磁干扰和爆炸风险的侵害，用于密封甲板和舱壁中的电缆和管道，以减少特大船体中的应力，还可以在控制柜和接线盒中获得空间。

The TESTECK cable and pipeline sealing system provides certified protection against gas, fire, water, electromagnetic interference, and explosion risks. The system is used to seal cables and pipelines in decks and bulkheads to reduce stress in oversized hulls, and can also obtain space in control cabinets and junction boxes.

钻井平台
Drilling platform

泰士特电缆和管道密封系统有助于应对恶劣的海洋环境，并提供经认证的保护功能，以抵御火、气体、水、电磁干扰和爆炸风险的侵害。此外，还可提供接地解决方案。

The TESTECK cable and pipeline sealing system helps to cope with harsh marine environments and provides certified protection against fire, gas, water, electromagnetic interference, and explosion risks. In addition, grounding solutions can also be provided.

密封系统
SEALING SYSTEM
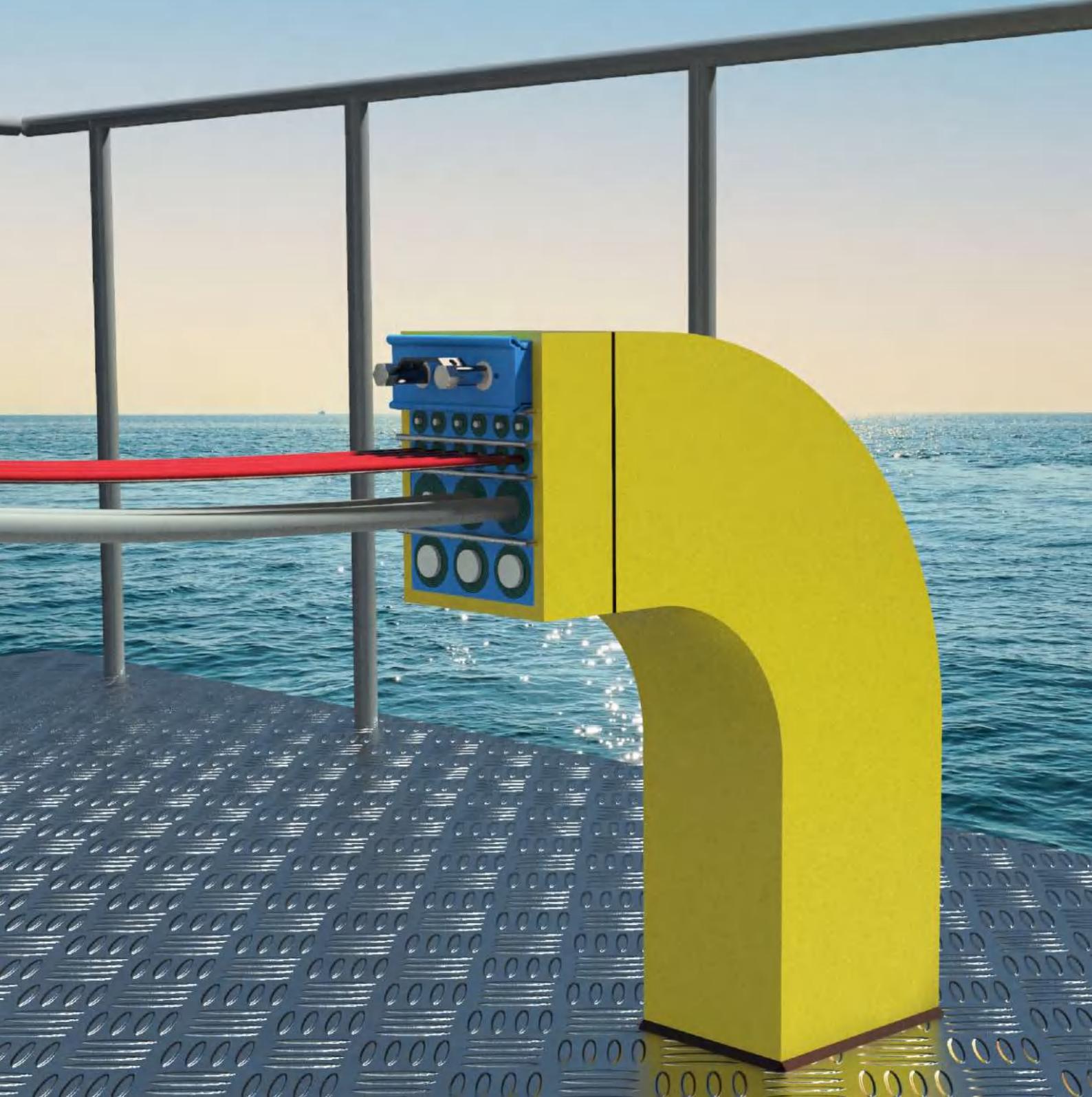
密封系统-矩形 SEALING SYSTEM – RECTANGULAR

T SWS-X+X…+X×N-AO 矩形焊接密封系统（精密开孔） rectangular welding sealing system (precision opening)

T SWS-X+X…+X×N-AO矩形焊接密封系统（精密开孔）由矩形金属框架（T SWF-X+X…+X×N-AO）和T SC Series密封模块、涨紧装置、隔板等配件构成，用于集中布置的电缆或管道的密封。矩形框架适用于精密开孔，其以焊接的方式固定在舱壁或甲板等位置。

T SWS–X+X…+X × N-AO rectangular welding sealing system (precision opening), composed of rectangular metal frame (T SWF-X+X…+X × N-AO) and TSC Series sealing modules, tensioner, interlayer, and other accessories, is used for sealing cables or pipelines arranged in a centralized manner. Rectangular frames are suitable for precision opening and are fixed to positions such as bulkheads or decks by welding.

技术指标
耐火等级：A-0、A-60
防护等级：IP68
水密：0.3MPa
气密：0.3MPa
寿命：30年

Technical indicators
Fire resistance rating: A-0, A-60
Protection level: IP68
Water tightness: 0.3MPa
Air tightness: 0.3MPa
Life: 30 years

产品构成 COMPOSITION

T SWF-X+X…+X×N-AO系列 T SWF-X+X…+X×N-AO Series	TSC-M Series模块 TSC Series Module	TSC-E Series盲堵模块 TSC-E Series blind plug module	Tensioner Series涨紧块 Tensioner Series Tensioner
Interlayer Series隔板 Interlayer Series Interlayer	SL-55润滑脂 SL-55 Grease		

密封系统-矩形 SEALING SYSTEM - RECTANGULAR

T SWS-X+X…+X×N-RO 矩形焊接密封系统(粗开孔) rectangular welding sealing system (coarse opening)

T SWS-X+X…+X×N-RO矩形焊接密封系统（粗开孔）由矩形金属框架（T SWF-X+X…+X×N-RO）和TSC Series密封模块、涨紧装置、隔板等配件构成，用于集中布置的电缆或管道的密封。矩形框架适用于粗开孔，其以焊接的方式固定在舱壁或甲板等位置。

T SWS–X+X…+X × N–RO rectangular welding sealing system (coarse opening), composed of rectangular metal frame (T SWF-X+X…+X × N–RO) and TSC Series sealing modules, tensioning devices, partitions, and other accessories, is used for sealing cables or pipelines arranged in a centralized manner. Rectangular frames are suitable for rough openings and are fixed to positions such as bulkheads or decks by welding.

技术指标	Technical indicators
耐火等级：A-0、A-60	Fire resistance rating: A-0, A-60
防护等级：IP68	Protection level: IP68
水密：0.3MPa	Water tightness: 0.3MPa
气密：0.3MPa	Air tightness: 0.3MPa
寿命：30年	Life: 30 years

产品构成 COMPOSITION

T SWF-X+X…+X×N-RO系列 T SWF-X+X…+X×N-RO Series	TSC-M Series模块 TSC Series Module	TSC-E Series盲堵模块 TSC-E Series blind plug module	Tensioner Series涨紧块 Tensioner Series Tensioner

Interlayer Series隔板 Interlayer Series Interlayer	SL-55润滑脂 SL-55Grease		

密封系统-矩形 SEALING SYSTEM – RECTANGULAR

T SWS-R*-X+X…+X×N-AO 矩形焊接密封系统　rectangular welding sealing system

T SWS-R*-X+X…+X×N-AO矩形焊接密封系统，由矩形金属框架（T SWF-R*-X+X…+X×N-AO）和TSC-M Series密封模块、涨紧装置、隔板等配件构成，用于集中布置的电缆或管道的密封。矩形框架适用于精密开孔，其以焊接的方式固定在舱壁或甲板等位置。为消除开孔处产生应力集中对应框架上也设置了较大的圆角，标准圆角分为R20和R40两种尺寸。

T SWS-R * – X+X…+X × N-AO rectangular welding sealing system, consisting of a rectangular metal frame (T SWF-R * – X+X…+X × N-AO) and TSC-M Series sealing modules, tensioning devices, partitions, and other accessories, is used for sealing cables or pipelines arranged in a centralized manner. Rectangular frames are suitable for precision opening and are fixed to positions such as bulkheads or decks by welding. To eliminate stress concentration at the opening, larger rounded corners are also set on the corresponding frame, and the standard rounded corners are divided into two sizes: R20 and R40.

技术指标	Technical indicators
耐火等级：A-0、A-60	Fire resistance rating: A-0, A-60
防护等级：IP68	Protection level: IP68
水密：0.3MPa	Water tightness: 0.3MPa
气密：0.3MPa	Air tightness: 0.3MPa
寿命：30年	Life: 30 years

产品构成　COMPOSITION

T SWF-R*-X+X…+X×N-AO T SWF-R*-X+X…+X×N-AO Series	TSC-M Series模块 TSC-M Series Module	TSC-R Series盲堵模块 TSC-R Series blind plug module	TSC-E Series盲堵模块 TSC-E Series blind plug module
Tensioner Series涨紧块 Tensioner Series Tensioner	Interlayer Series隔板 Interlayer Series Interlayer	SL-55润滑脂 SL-55 Grease	

密封系统-矩形 SEALING SYSTEM - RECTANGULAR

T SBS-X+X…+X×N-N/M/W 矩形栓接密封系统　rectangular welding sealing system

T SBS-X+X…+X×N-N/M/W矩形栓接密封系统由矩形金属框架（T SBF-X+X…+X×N-N/M/W）和TSC Series密封模块、涨紧装置、隔板等配件构成，用于集中布置的电缆或管道的密封。矩形框架适用于粗开孔，其以栓接的方式固定在舱壁或甲板等位置的开孔处。

T SBS-X+X…+X × N-N/M/W rectangular bolted sealing system, consisting of a rectangular metal frame (T SBF-X+X…+X × N-N/M/W) and TSC Series sealing modules, tensioning devices, partitions, and other accessories, is used for sealing cables or pipelines arranged in a centralized manner. Rectangular frames, suitable for rough openings, are bolted to openings in bulkheads or decks.

技术指标	Technical indicators
耐火等级：A-0、A-60	Fire resistance rating: A-0, A-60
防护等级：IP68	Protection level: IP68
水密：0.3MPa	Water tightness: 0.3MPa
气密：0.3MPa	Air tightness: 0.3MPa
寿命：30年	Life: 30 years

产品构成　COMPOSITION

T SBF-X+X…+X×N-N/M/W框架 T SBF-X+X…+X×N-N/M/W Frame	TSC-M Series模块 TSC-M Series Module	TSC-E Series盲堵模块 TSC-E Series blind plug module	Tensioner Series涨紧块 Tensioner Series Tensioner
Interlayer Series隔板 Interlayer Series Interlayer	SL-55润滑脂 SL-55 Grease		

密封系统-轻质 SEALING SYSTEM – LIGHTWEIGHT

TE密封系统　TE sealing system

TE密封系统采用铝合金框架，结构紧凑、轻巧、美观，适合安装于箱柜外部或内部，对多跟电缆进行密封防护

The TE sealing system adopts an aluminum alloy frame, which is compact, lightweight, and aesthetically pleasing. It is suitable for installation on the outside or inside of cabinets, providing sealing protection for multiple cables.

技术指标

耐火等级：A-0、A-15
水密：0.01MPa
气密：0.01MPa
防护等级：IP68
寿命：30年

Technical indicators

Fire resistance rating: A-0, A-15
Water tightness: 0.01MPa
Air tightness: 0.01MPa
Protection level: IP68
Life: 30 years

产品构成 COMPOSITION

TE Series框架 TE Series Frame	TSC-M-2/3 Series模块 TSC-M-2/3 Series Module	TSC-E-2/3 Series盲堵模块 TSC-E-2/3 Series blind plug module
SL-55润滑脂 SL-55 Grease		

密封系统-轻质 SEALING SYSTEM - LIGHTWEIGHT

TF密封系统 TF sealing system

TF密封系统采用铝合金框架，结构紧凑、轻巧、美观，适合安装于箱柜外部或内部，对多跟电缆进行密封防护

The TF sealing system adopts an aluminum alloy frame, which is compact, lightweight, and aesthetically pleasing. It is suitable for installation on the outside or inside of cabinets, providing sealing protection for multiple cables.

技术指标

水密：0.01MPa
气密：0.01MPa
防护等级：IP68
寿命：30年

Technical indicators

Water tightness: 0.01MPa
Air tightness: 0.01MPa
Protection level: IP68
Life: 30 years

产品构成 COMPOSITION

TF Series框架 TF Series Frame	TSC-M-1/2 Series模块 TSC-M-1/2 Series Module	TSC-E-1/2 Series盲堵模块 TSC-E -1/2 Series blind plug module
SL-55润滑脂 SL-55 Grease		

密封系统-轻质 SEALING SYSTEM - LIGHTWEIGHT

TG密封系统 TG sealing system

TG密封系统采用铝合金框架，结构紧凑、轻巧、美观，适合安装于箱柜外部或内部，对多跟电缆进行密封防护，采用涨紧装置压紧，比其它轻质密封系统具有更高的防护能力

The TG sealing system adopts an aluminum alloy frame, which is compact, lightweight, and aesthetically pleasing. It is suitable for installation on the outside or inside of boxes and cabinets. It provides sealing protection for multiple cables and compress them using a tensioner, providing higher protection capabilities than other lightweight sealing systems.

技术指标	Technical indicators
耐火等级：A-0、A-30	Fire resistance rating: A-0, A-30
防护等级：IP68	Protection level: IP68
水密：0.3MPa	Water tightness: 0.3MPa
气密：0.3MPa	Air tightness: 0.3MPa
寿命：30年	Life: 30 years

产品构成 COMPOSITION

TG Series框架 TG Series Frame	TSC Series模块 TSC-M Series Module	TSC-E Series盲堵模块 TSC-E Series blind plug module
Tensioner-60涨紧块 Tensioner-60 Tensioner	Interlayer-60隔板 Interlayer-60 Interlayer	SL-55润滑脂 SL-55 Grease

密封系统-圆形 SEALING SYSTEM - CIRCULAR

焊接式-圆形 Welded - Circular
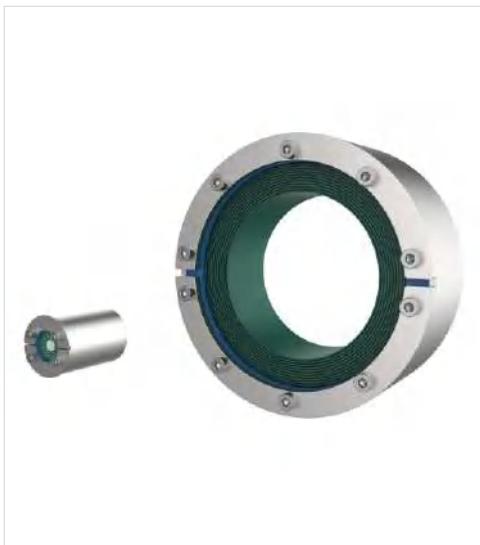
T CWS-AO Series圆形焊接密封系统（精密开孔）

由套筒（管状结构）和T SR Series密封组件构成，其套筒焊接在精确开孔尺寸的甲板或舱壁上，用于单根电缆或管道的密封。

The T CWS * – AO circular welding sealing system (precision opening) is composed of a sleeve (tubular structure) and T SR Series sealing components. The sleeve is welded to the precise opening size of the deck or bulkhead for sealing a single cable or pipeline.

技术指标	Technical indicators
耐火等级：A-0、A-60	Fire resistance rating: A-0, A-60
防护等级：IP68	Protection level: IP68
水密：0.4MPa	Water tightness: 0.4MPa
气密：0.4MPa	Air tightness: 0.4MPa
寿命：30年	Life: 30 years

产品构成 COMPOSITION

T CWF-AO Series套筒 T CWF-AO Series Sleeve	TSR Series密封组件 TSR Series Sealing component	SL-55润滑脂 SL-55 Grease	

密封系统-圆形 SEALING SYSTEM – CIRCULAR

焊接式-圆形 Welded – Circular

T CWS-RO Series圆形焊接密封系统（粗开孔）

由套筒（含焊接法兰）和T SR Series密封组件构成，其套筒焊接在粗开孔尺寸的甲板或舱壁上，用于单根电缆或管道的密封。

The T CWS-RO circular welding sealing system (coarse opening) is composed of a sleeve (including welding flanges) and T SR Series sealing components. The sleeve is welded to the deck or bulkhead of the coarse opening size and used for sealing a single cable or pipeline.

产品构成 COMPOSITION

T CWF-RO Series套筒 T CWF-RO Series Sleeve	TSR Series密封组件 TSR Series Sealing component	SL-55润滑脂 SL-55 Grease	

密封系统-圆形 SEALING SYSTEM - CIRCULAR

焊接式-圆形 Welded - Circular

T CWS-RT-AO Series圆形焊接密封系统（精密开孔）

由套筒（管状结构）和T TCS Series密封组件或T RES Series密封组件构成，其套筒焊接在精确开孔尺寸的甲板或舱壁上，用于多根电缆和管道的密封。

技术指标

耐火等级：A-0、A-60
防护等级：IP68
水密：0.4MPa（T RES Series）0.1MPa（T TCS Series）
气密：0.4MPa（T RES Series）0.1MPa（T TCS Series）
寿命：30年

The T CWS-RT-AO circular welding sealing system (precision opening) consists of a sleeve (tubular structure) and T TCS Series sealing components or T RES Series sealing components. The sleeve is welded to a precisely sized deck or bulkhead for sealing multiple cables and pipelines.

Technical indicators

Fire resistance rating: A-0, A-60

Protection level: IP68

Water tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Air tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Life: 30 years

产品构成 COMPOSITION

T CWF-RT-AO Series 套筒 T CWF-RT-AO Series Sleeve	T TCS Series密封组件 T TCS Series Sealing component	T RES Series密封组件 T RES Series Sealing component	SL-55润滑脂 SL-55 Grease

密封系统-圆形 SEALING SYSTEM – CIRCULAR

焊接式-圆形 Welded – Circular

T CWS-RT-RO Series圆形焊接密封系统（粗开孔）

由套筒（含焊接法兰）和T TCS Series密封组件或T RES Series密封组件构成，其套筒焊接在粗开孔尺寸的甲板或舱壁上，用于多根电缆和管道的密封。

技术指标

耐火等级：A-0、A-60
防护等级：IP68
水密：0.4MPa（T RES Series）0.1MPa（T TCS Series）
气密：0.4MPa（T RES Series）0.1MPa（T TCS Series）
寿命：30年

The T CWS-RT-RO circular welding sealing system (coarse opening) consists of a sleeve (including welding flanges) and T TCS Series sealing components or T RES Series sealing components. The sleeve is welded to the deck or bulkhead of the coarse opening size and is used for sealing multiple cables and pipelines.

Technical indicators

Fire resistance rating: A-0, A-60

Protection level: IP68

Water tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Air tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Life: 30 years

产品构成 COMPOSITION

T CWF-RT-RO Series套筒 T CWF-RT-RO Series Sleeve	T TCS Series密封组件 T TCS Series Sealing component	T RES Series密封组件 T RES Series Sealing component	SL-55润滑脂 SL-55 Grease

密封系统-圆形 SEALING SYSTEM - CIRCULAR

栓接式-圆形 Circular bolted - Circular
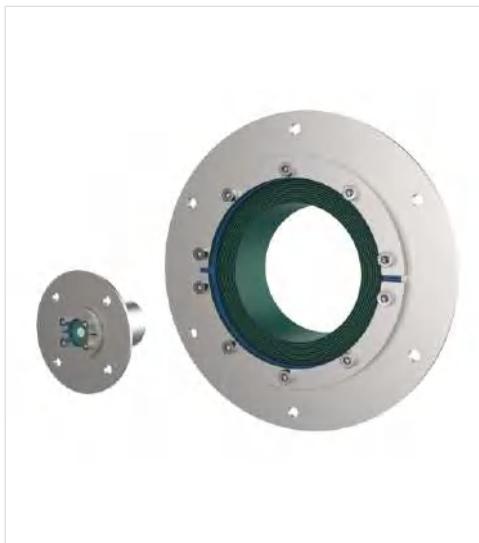
T CBS-N/M/W Series圆形栓接密封系统

由套筒（含栓接法兰）和T SR Series密封组件构成，其套筒栓接在甲板或舱壁上，用于单根电缆或管道的密封，其N/M/W标定了三种不同的法兰尺寸。

The T CBS - N/M/W sealing system consists of a sleeve (including bolted flanges) and T SR Series sealing components. The sleeve is bolted to the deck or bulkhead for sealing a single cable or pipeline, and its N/M/W is calibrated with three different flange sizes.

产品构成 COMPOSITION

T CBF-N/M/W Series套筒 T CBF-N/M/W Series Sleeve	TSR Series密封组件 TSR Series Sealing component	SL-55润滑脂 SL-55 Grease	

密封系统-圆形 SEALING SYSTEM – CIRCULAR

栓接式-圆形 Circular bolted – Circular

T CBS-RT-N/M/W Series圆形栓接密封系统

由套筒（含栓接法兰）和T TCS Series密封组件或T RES Series密封组件构成，其套筒栓接在甲板或舱壁上，用于多根电缆和管道的密封，其N/M/W标定了三种不同的法兰尺寸。

技术指标

耐火等级：A-0、A-60

防护等级：IP68

水密：0.4MPa（T RES Series）0.1MPa（T TCS Series）

气密：0.4MPa（T RES Series）0.1MPa（T TCS Series）

寿命：30年

The T CBS-RT - N/M/W circular bolted sealing system consists of a sleeve (including bolted flanges) and T TCS Series sealing components or T RES Series sealing components. The sleeve is bolted to the deck or bulkhead for sealing multiple cables and pipelines, and its N/M/W defines three different flange sizes.

Technical indicators

Fire resistance rating: A-0, A-60

Protection level: IP68

Water tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Air tightness: 0.4MPa (T RES Series), 0.1MPa (T TCS Series)

Life: 30 years

产品构成 COMPOSITION

T CBF-RT-N/M/W Series套筒 T CBF-RT-N/M/W Series Sleeve	T TCS Series密封组件 T TCS Series Sealing component	T RES Series密封组件 T RES Series Sealing component	SL-55润滑脂 SL-55 Grease

密封配件
SEALING ACCESSORIES
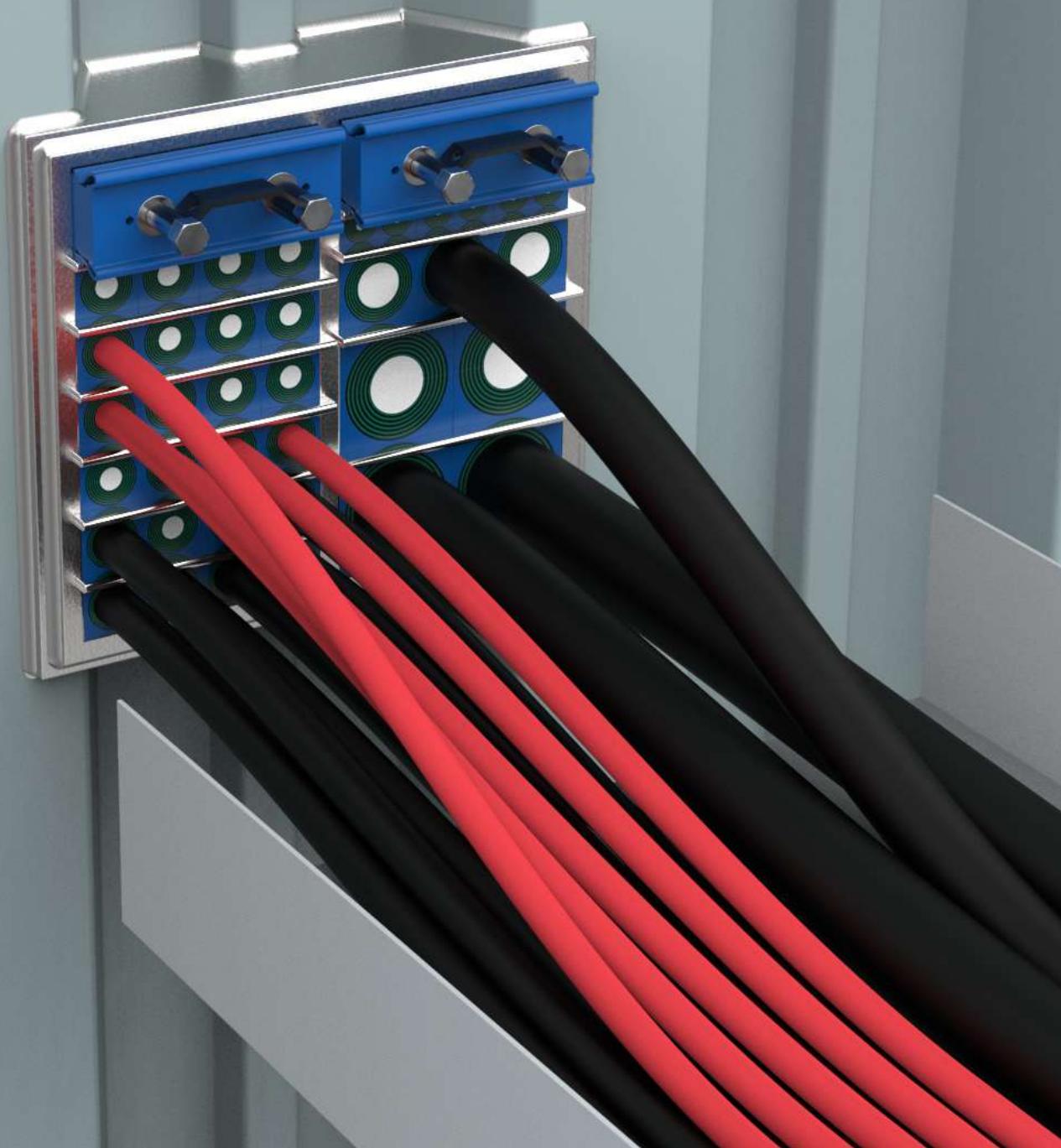
密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-M Series密封模块　　TSC-M Series sealing module

Single channel 单通道　　　Dual-channel 双通道　　　Three-channel 三通道
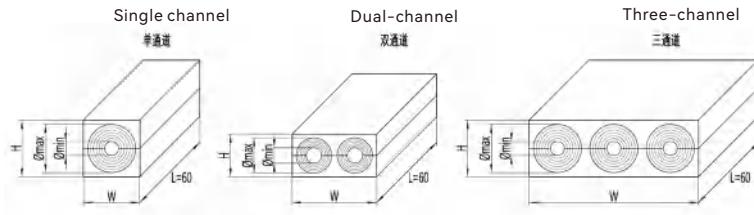
TSC-M Series密封模块长度为60mm，可轻松适配不同尺寸的电缆和管道，亦可作为备用冗余以满足未来的容量需求

材料：三元乙丙橡胶（EPDM）
用于外径为3-98mm的电缆或管道
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

The TSC-M Series sealing module, 60mm long, can easily adapt to cables and pipelines of different sizes, and also serve as backup redundancy to meet future capacity requirements

Material: Ethylene Propylene Diene Monomer (EPDM)
For cables or pipelines with an outer diameter of 3-98mm
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	W W	H H	L L	Ømin Ømin	Ømax Ømax	通道数量 Number of channels	变径范围 Range of diameter	芯棒 Mandrel
TSC-M15	15	15	60	3	11.4	1	3-11	有 With
TSC-M20	20	20	60	3	15	1	3-14.5	有 With
TSC-M30	30	30	60	10.6	25	1	10.6-24.5	有 With
TSC-M40/H30	40	30	60	10.6	25	1	10.6-24.5	有 With
TSC-M40(10)	40	40	60	9.8	35	1	9.8-34.5	有 With
TSC-M40(21)	40	40	60	21	35	1	21-34.5	有 With
TSC-Double-M40	40	20	60	4	16	2	4-15.5	有 With
TSC-Three-M40	40	20	60	4	10	3	4-9.5	有 With
TSC-Four-M40	40	20	60	3.4	7	4	3.4-6.5	有 With
TSC-M60	60	60	60	27.6	54	1	27.6-53	有 With
TSC-M60/E	60	60	60	27.6	54	1	27.6-53	无 Without
TSC-Double-M60	60	30	60	9.6	26.4	2	9.6-26	有 With
TSC-Three-M60	60	20	60	4	16	3	4-15.5	有 With
TSC-M80	80	80	60	44.6	71	1	44.6-70	有 With
TSC-M80/E	80	80	60	44.6	71	1	44.6-70	无 Without
TSC-M90	90	90	60	46.2	77	1	46.2-76	有 With
TSC-M90/E	90	90	60	46.2	77	1	46.2-76	无 Without
TSC-M120	120	120	60	68.2	99	1	68.2-98	有 With
TSC-M120/E	120	120	60	68.2	99	1	68.2-98	无 Without
TSC-Four-M120	120	30	60	9.6	26.4	4	9.6-26	有 With
TSC-Five-M120	120	25	60	13.1	21.5	5	13.1-21	有 With

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-M-2/3 Series密封模块   TSC-M-2/3 Series Sealing Module

单通道 Single channel   双通道 Dual-channel   三通道 Three-channel
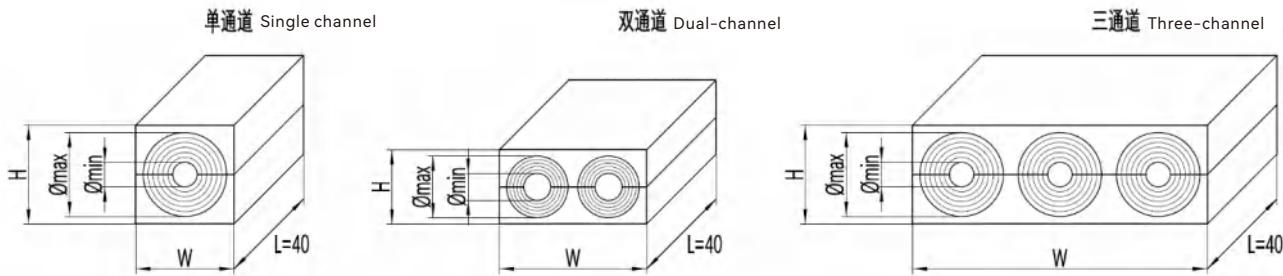
TSC-M-2/3 Series密封模块长度为40mm，可轻松适配不同尺寸的电缆和管道，亦可作为备用冗余以满足未来的容量需求

材料：三元乙丙橡胶（EPDM）
用于外径为3-34.5mm的电缆或管道
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

The TSC-M-2/3 Series sealing module, 40mm long, can easily adapt to cables and pipelines of different sizes. It can also be used as backup redundancy to meet future capacity requirements.

Material: EPDM
For cables or pipelines with an outer diameter of 3-34.5mm
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	W W	H H	L L	Ømin Ømin	Ømax Ømax	通道数量 Number of channels	变径范围 Range of diameter	芯棒 Mandrel
TSC-M15-2/3	15	15	40	3	11.4	1	3-11	有 With
TSC-M20-2/3	20	20	40	3	15	1	3-14.5	有 With
TSC-M30-2/3	30	30	40	10.6	25	1	10.6-24.5	有 With
TSC-M40/H30-2/3	40	30	40	10.6	25	1	10.6-24.5	有 With
TSC-M40(10) -2/3	40	40	40	9.8	35	1	9.8-34.5	有 With
TSC-M40(21)-2/3	40	40	40	21	35	1	21-34.5	有 With
TSC-Double-M40-2/3	40	20	40	4	16	2	4-15.5	有 With
TSC-Three-M40-2/3	40	20	40	4	10	3	4-9.5	有 With
TSC-Four-M40-2/3	40	20	40	3.4	7	4	3.4-6.5	有 With

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-M-1/2 Series密封模块　TSC-M-1/2 Series Sealing Module

单通道 Single channel　双通道 Dual-channel　三通道 Three-channel
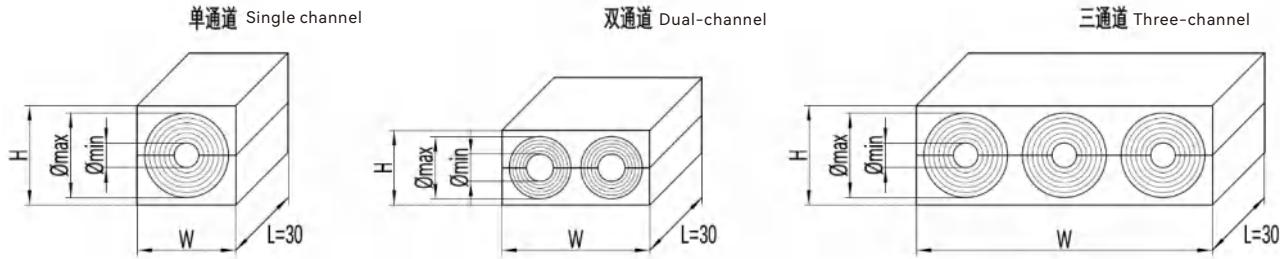
TSC-M-1/2 Series密封模块长度为30mm，可轻松适配不同尺寸的电缆和管道，亦可作为备用冗余以满足未来的容量需求

材料：三元乙丙橡胶（EPDM）
用于外径为3-34.5mm的电缆或管道
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

The TSC-M-1/2 Series sealing module, 30mm long, can easily adapt to cables and pipelines of different sizes. It can also be used as backup redundancy to meet future capacity requirements.

Material: Ethylene Propylene Diene Monomer (EPDM)
For cables or pipelines with an outer diameter of 3-34.5mm
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm）　Specification List (Unit: mm)

| 型号 Model	W W	H H	L L	Ømin Ømin	Ømax Ømax	通道数量 Number of channels	变径范围 Range of diameter	芯棒 Mandrel
TSC-M15-1/2	15	15	30	3	11.4	1	3-11	有 With
TSC-M20-1/2	20	20	30	3	15	1	3-14.5	有 With
TSC-M30-1/2	30	30	30	10.6	25	1	10.6-24.5	有 With
TSC-M40/H30-1/2	40	30	30	10.6	25	1	10.6-24.5	有 With
TSC-M40(10) -1/2	40	40	30	9.8	35	1	9.8-34.5	有 With
TSC-M40(21)-1/2	40	40	30	21	35	1	21-34.5	有 With
TSC-Double-M40-1/2	40	20	30	4	16	2	4-15.5	有 With
TSC-Three-M40-1/2	40	20	30	4	10	3	4-9.5	有 With
TSC-Four-M40-1/2	40	20	30	3.4	7	4	3.4-6.5	有 With

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-E Series盲堵模块　TSC-E Series blind plug module
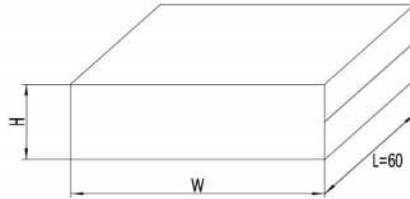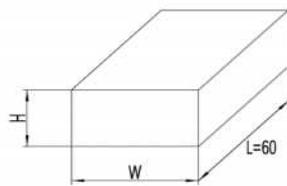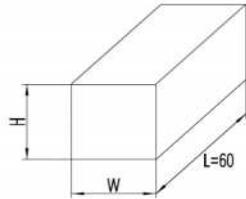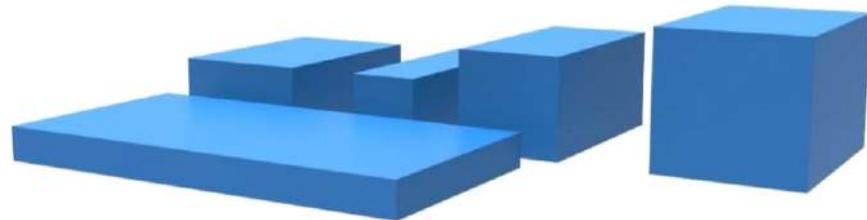
TSC-E Series盲堵模块长度为60mm，可作为无需备用冗余密封系统，填充多余的密封空间以节省成本或为标准框架匹配出更优的模块配置

材料：三元乙丙橡胶（EPDM）
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

The TSC-E Series blind plug module, 60mm long, can be used as a redundant sealing system without the need for backup, filling excess sealing space to save costs or matching better module configurations for standard frameworks.

Material: Ethylene Propylene Diene Monomer (EPDM)
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	W	H	L
TSC-E20×20	20	20	60
TSC-E30×30	30	30	60
TSC-E40×5	40	5	60
TSC-E40×10	40	10	60
TSC-E40×20	40	20	60
TSC-E40×40	40	40	60
TSC-E60×5	60	5	60
TSC-E60×10	60	10	60
TSC-E60×20	60	20	60
TSC-E60×60	60	60	60
TSC-E80×80	80	80	60
TSC-E90×90	90	90	60
TSC-E120×5	120	5	60
TSC-E120×10	120	10	60
TSC-E120×20	120	20	60
TSC-E120×120	120	120	60

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

T RFM盲堵模块　T RFM blind plug module
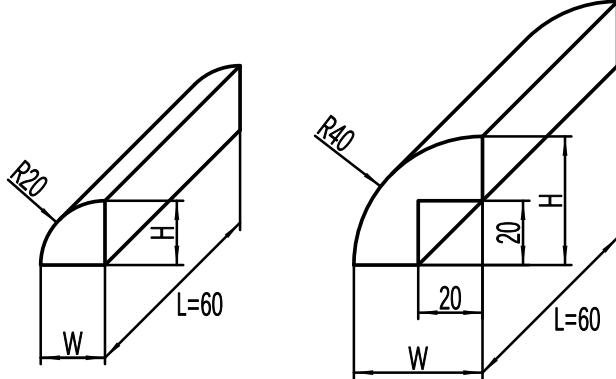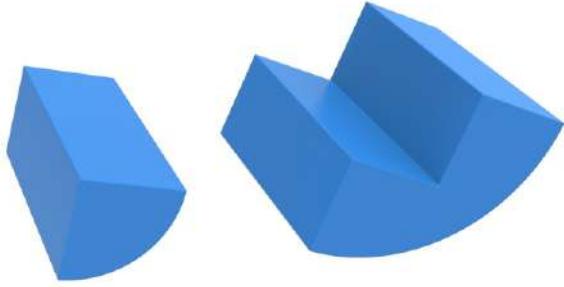
T RFM盲堵模块长度为60mm，可作为T SWF-20和T SWF-40具有较大圆角框架盲堵模块使用，填充框架R圆角

材料：三元乙丙橡胶（EPDM）
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

T RFM blind plug module, 60mm long, can be used as a blind block module for T RFM20 and T RFM40 frames with larger rounded corners, filling the R rounded corners of the frame.

Material: Ethylene Propylene Diene Monomer (EPDM)
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm）Specification List (Unit: mm)

型号 Model	W	H	L
T RFM-20	20	20	60
T RFM-40	40	40	60

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-E-2/3 Series盲堵模块　　TSC-E-2/3 Series blind plug module
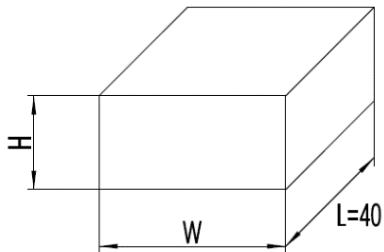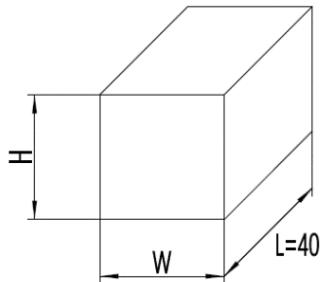
TSC-E-2/3 Series盲堵模块长度为40mm，可作为无需备用冗余密封系统，填充多余的密封空间以节省成本或为标准框架匹配出更优的模块配置

材料：三元乙丙橡胶（EPDM）
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

The TSC-E-2/3 Series blind plug module, 40mm long, can be used as a redundant sealing system without the need for backup, filling excess sealing space to save costs or matching better module configurations for standard frame.

Material: Ethylene Propylene Diene Monomer (EPDM)
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	W	H	L
TSC-E20×20-2/3	20	20	40
TSC-E30×30-2/3	30	30	40
TSC-E40×5-2/3	40	5	40
TSC-E40×10-2/3	40	10	40
TSC-E40×20-2/3	40	20	40
TSC-E40×40-2/3	40	40	40

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

TSC-E-1/2 Series盲堵模块　　TSC-E-1/2 Series blind plug module
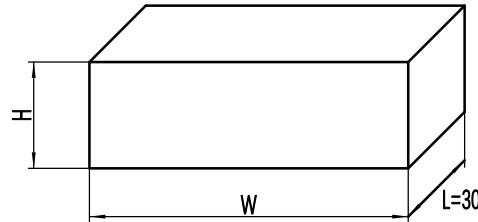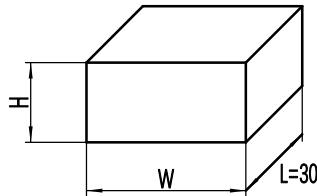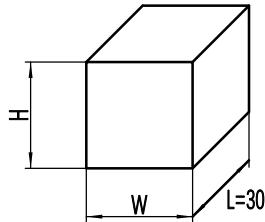
TSC-E-1/2 Series盲堵模块长度为30mm，可作为无需备用冗余密封系统，填充多余的密封空间以节省成本或为标准框架匹配出更优的模块配置

材料：三元乙丙橡胶（EPDM）

The TSC-E-1/2 Series blind plug module, 30mm long, can be used as a redundant sealing system without the need for backup, filling excess sealing space to save costs or matching better module configurations for standard frame.

Material: Ethylene Propylene Diene Monomer (EPDM)

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	W	H	L
TSC-E20×20-1/2	20	20	30
TSC-E30×30-1/2	30	30	30
TSC-E40×5-1/2	40	5	30
TSC-E40×10-1/2	40	10	30
TSC-E40×20-1/2	40	20	30
TSC-E40×40-1/2	40	40	30

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

Tensioner 涨紧装置
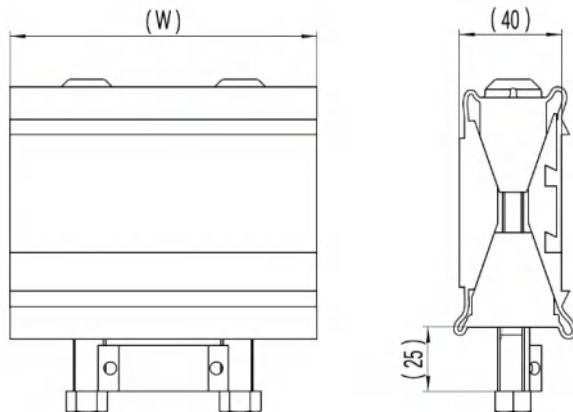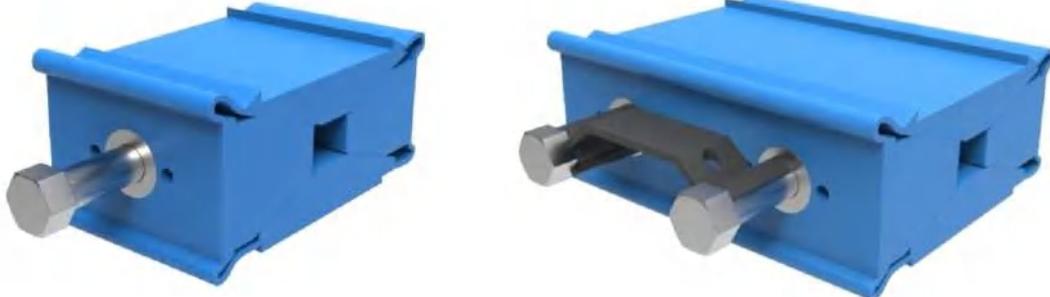
Tensioner楔形结构的涨紧装置，安装在对应尺寸的矩形框架中，用于压紧密封腔内的模块。

橡胶材料：三元乙丙橡胶（EPDM），金属材料：316L、304
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

Wedge shaped structure tensioner, installed in a rectangular frame of corresponding size, is used to compress the modules in the sealing chamber.

Rubber material: Ethylene Propylene Diene Monomer (EPDM), metal material: 316L and 304
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm）Specification List (Unit: mm)

型号 Model	匹配密封腔宽度的名义尺寸Nominal size matching the width of the sealing chamber
Tensioner-120-316L	120
Tensioner-60-316L	60

密封配件-矩形 SEALING ACCESSORIES – RECTANGULAR

Interlayer 隔板
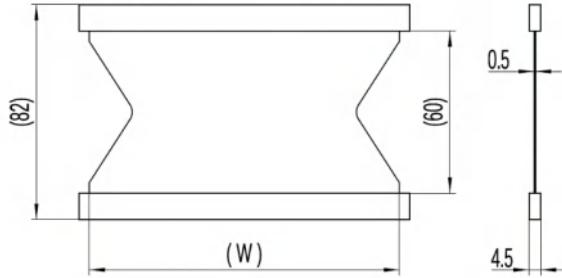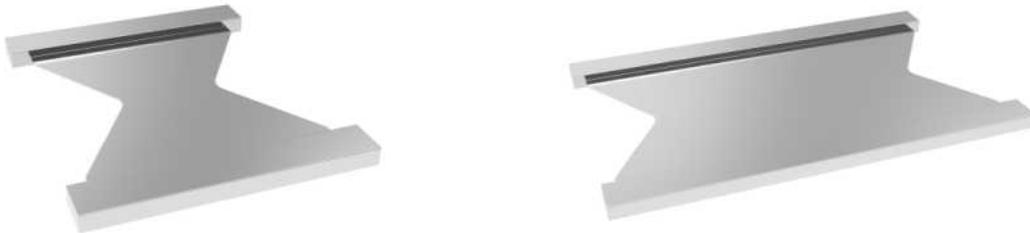
Interlayer隔板安装于矩形框架内的模块之间和模块和涨紧装置之间，防止模块受到爆炸冲击或外界压力时，不会从框架内脱出，可保持结构完整。

材料：304、316L
与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

Interlayer is installed between modules within a rectangular frame and between modules and tensioners to prevent modules, when subjected to explosive impact or external pressure, from falling out of the frame and to maintain structural integrity.

Material: 304, 316L
Form a complete sealing system in combination with other corresponding rectangular sealing accessories

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	匹配密封腔宽度的名义尺寸Nominal size matching the width of the sealing chamber
Interlayer–120–316L	120
Interlayer–60–316L	60

密封配件-圆形 SEALING ACCESSORIES – CIRCULAR

TSR Series密封组件　TSR Series sealing components
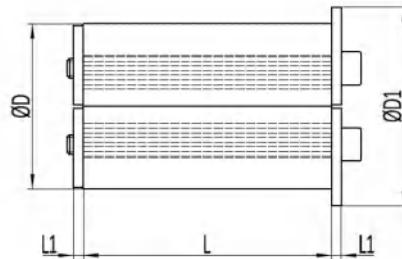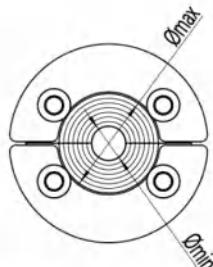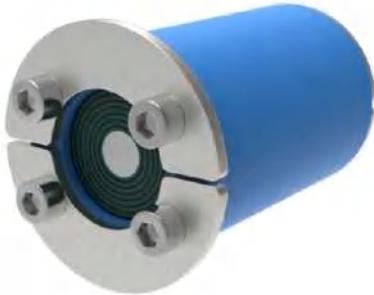
TSR Series密封组件是一种圆形孔洞密封件，压紧件集成在密封件中，密封单根电缆或管道

橡胶材料：三元乙丙橡胶（EPDM），金属材料：316L
用于外径为3.8-361mm的电缆或管道

可直接安装在预留孔洞的现有电缆或管道周围，亦可与相应的其它圆形密封配件组合使用形成一套完整的密封系统

The TSR Series sealing component is a circular hole sealing element, in which a compression element is integrated into the sealing element to seal a single cable or pipeline

Rubber material: Ethylene Propylene Diene Monomer (EPDM), metal material: 316L

For cables or pipelines with an outer diameter of 3.8-361mm It can be directly installed around existing cables or pipelines with reserved holes, and can also form a complete sealing system in combination with other circular sealing accessories.

规格列表（单位：mm）Specification List (Unit: mm)

型号 Model	ØD	ØD1	Ømin	Ømax	L	L1	变径范围 Range of diameter	螺钉规格 Screw specifications	芯棒 Mandrel	开孔尺寸 Size of opening
TSR25-316L	25	30	3.8	11	36	3	3.8-10.5	M3	有With	25-25.5
TSR31-316L	31	36	3.8	15.8	36	3	3.8-15.3	M4	有With	31-31.5
TSR43-316L	43	49	3.8	23	75	3	3.8-22.5	M6	有With	43-43.5
TSR50-316L	50	60	10.4	30	75	3	10.4-29.5	M6	有With	50-50.5
TSR68-316L	68	78	26	48	73	5	26-47	M5	有With	68-69
TSR75-316L	75	85	24.2	55	75	6	24.2-54	M6	有With	75-76
TSR100-316L	100	110	48.6	75	75	8	48.6-74	M6	有With	100-101
TSR125-316L	125	135	69.2	100	75	8	69.2-99	M6	有With	125-126
TSR150-316L	150	160	93.6	120	75	8	93.6-119	M6	无Without	150-152
TSR175-316L	175	185	118.6	145	75	8	118.6-144	M6	无Without	175-177
TSR200-316L	200	210	126	170	70	8	126-169	M8	无Without	200-202
TSR250-316L	250	260	176	220	70	8	176-219	M8	无Without	250-252
TSR300-316L	300	310	221	265	70	8	221-264	M8	无Without	300-302
TSR350-316L	350	360	271	315	70	8	271-314	M10	无Without	350-352
TSR400-316L	400	412	318	362	70	10	318-361	M10	无Without	400-402

密封配件-圆形 SEALING ACCESSORIES – CIRCULAR

T TCS Series密封组件　　T TCS Series sealing components
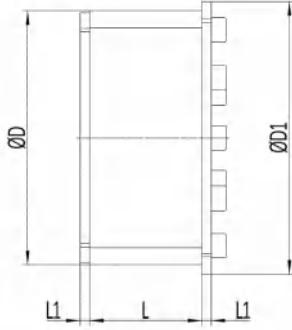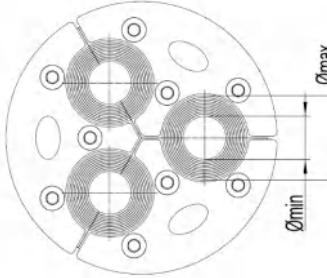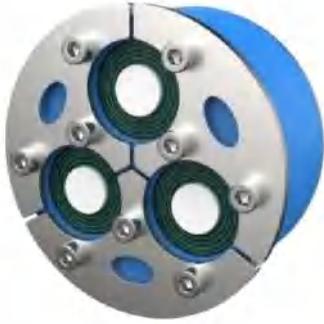
T TCS Sereis密封组件是一种圆形孔洞密封件，压紧件集成在密封件中，密封1到3根不同直径的电缆或管道

橡胶材料：三元乙丙橡胶（EPDM），金属材料：316L
用于外径为5-69mm的电缆或管道

可直接安装在预留孔洞的现有电缆或管道周围，亦可与相应的其它圆形密封配件组合使用形成一套完整的密封系统

The T TCS Sereis sealing component is a circular hole sealing element, in which a compression element is integrated into the sealing element to seal 1 to 3 cables or pipes of different diameters.

Rubber material: Ethylene Propylene Diene Monomer (EPDM), metal material: 316L
For cables or pipelines with an outer diameter of 5-69mm

It can be directly installed around existing cables or pipelines with reserved holes, and can also form a complete sealing system in combination with other circular sealing accessories.

规格列表（单位：mm）　Specification List (Unit: mm)

型号 Model	ØD	ØD1	Ømin	Ømax	L	L1	通道数量 Number of channels	变径范围 Range of diameter	螺钉规格 Screw specifications	芯棒 Mandrel	开孔尺寸 Size of opening
T TCS-3-53.5-316L	53.5	59.5	5	17	75	5	3	5-16.5	M6	有 With	53.5-54
T TCS-3-135-316L	135	145	23	45	60	5	3	23-44	M8	有 With	135-136
T TCS-3-200-316L	200	210	39.2	70	60	8	3	39.2-69	M8	有 With	200-202

密封配件-圆形　SEALING ACCESSORIES – CIRCULAR

T REF-F Series胶框组件　T REF-F Series rubber frame component
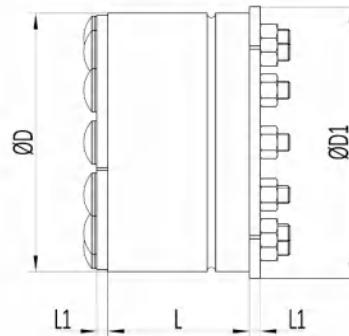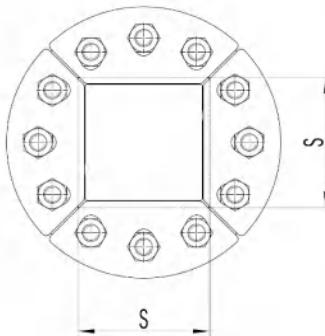
T REF-F Series胶框组件是一种带有方形内腔的圆形密封胶框，压紧件集成在胶框中，方形内腔可容纳单个或多个模块，对电缆或管道密封

橡胶材料：三元乙丙橡胶（EPDM），金属材料：316L

用于外径为3-70mm的电缆或管道
与矩形模块组合使用可直接安装在预留孔洞的现有电缆或管道周围，亦可安装在相应的圆形框架内形成一套完整的密封系统

The T REF-F Series rubber frame component is a circular sealant frame with a square inner cavity, in which compression components are integrated into the frame. The square inner cavity can accommodate single or multiple modules, sealing cables or pipelines.

Rubber material: Ethylene Propylene Diene Monomer (EPDM), metal material: 316L

For cables or pipelines with an outer diameter of 3-70mm Combined with rectangular modules, it can be directly installed around existing cables or pipelines with reserved holes, or can also be installed in corresponding circular frames to form a complete sealing system

规格列表（单位：mm）Specification List (Unit: mm)

型号 Model	ØD	ØD1	L	L1	方孔尺寸 Size of square hole	螺钉规格 Screw specifications	开孔尺寸 Size of opening
T RES-40-F-316L	80	85	65	5	40×40	M8	80.5-81
T RES-40-W-316L	80	85	65	5	40×40	M8	80.5-81
T RES-60-F-316L	120	130	65	5	60×60	M8	121-122
T RES-60-W-316L	120	130	65	5	60×60	M8	121-122
T RES-80-F-316L	140	150	65	8	80×80	M8	141-142
T RES-80-W-316L	140	150	65	8	80×80	M8	141-142
T RES-90-F-316L	150	160	65	8	90×90	M8	151-152
T RES-90-W-316L	150	160	65	8	90×90	M8	151-152
T RES-120-F-316L	200	210	65	8	120×120	M8	201-202
T RES-120-W-316L	200	210	65	8	120×120	M8	201-202

密封配件-圆形 SEALING ACCESSORIES – CIRCULAR

T RES-F Series密封组件 T RES-F Series sealing components

T RES-F Series密封组件由圆形方孔橡胶框与TSC-M Series矩形模块组成，模块的压紧功能由胶框承担，结构紧凑，安装在圆形套筒或金属管内，用于单根或多根电缆、管道的密封（电缆或管道外径≤99mm）。

The T RES-F Series sealing component consists of a circular square hole rubber frame and a TSC-M Series rectangular module. The module is compressed by the rubber frame, and the structure is compact. It is installed in a circular sleeve or metal tube, and is used for sealing single or multiple cables and pipelines (cable or pipeline with outer diameter ≤ 99mm).

技术指标
耐火等级：A-0、A-60（耐火型）
防护等级：IP68
水密：0.4MPa
气密：0.2MPa
寿命：30年

Technical indicators
Fire resistance rating: A-0, A-60 (fire resistance type)
Protection level: Ip68
Water tightness: 0.4MPa
Air tightness: 0.2MPa
Life: 30 years

产品构成 COMPOSITION

T REF-F Series 胶框 T REF-F Series Rubber frame	TSC-M Series 模块 TSC-M Series Module	SL-55润滑脂 SL-55 Grease	

框架-矩形 FRAME – RECTANGLE

矩形系列化标准密封腔   Rectangular series standard sealing chamber

矩形密封腔由标准高度和宽度尺寸的腔体构成，可在宽度和高度两个方向按列和行拓展为满足空间尺寸需求的框架

The rectangular sealing chamber, composed of chambers with standard height and width dimensions, can be expanded in terms of columns and rows in both width and height directions to meet the spatial size requirements of the frame.

标准密封腔规格
Specifications of standard sealing chamber

代号: 2x1
Code: 2x1

代号: 4x1
Code: 4x1

代号: 6x1
Code: 6x1

代号: 8x1
Code: 8x1
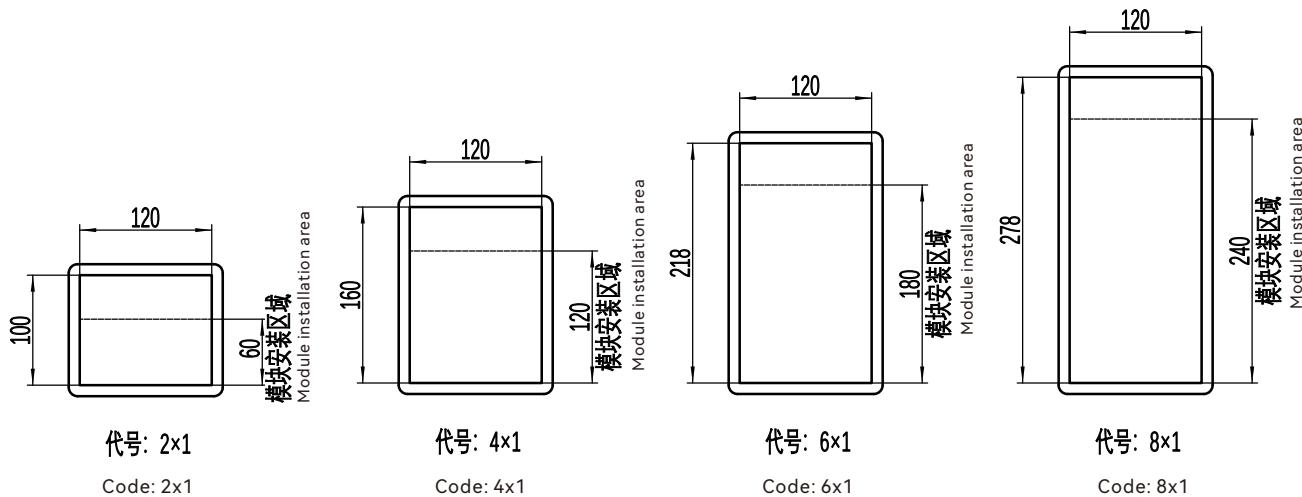
窄型密封腔规格
Specifications of narrow sealing chamber

代号: 1x1
Code: 1x1

代号: 3x1
Code: 3x1

代号: 5x1
Code: 5x1

代号: 7x1
Code: 7x1
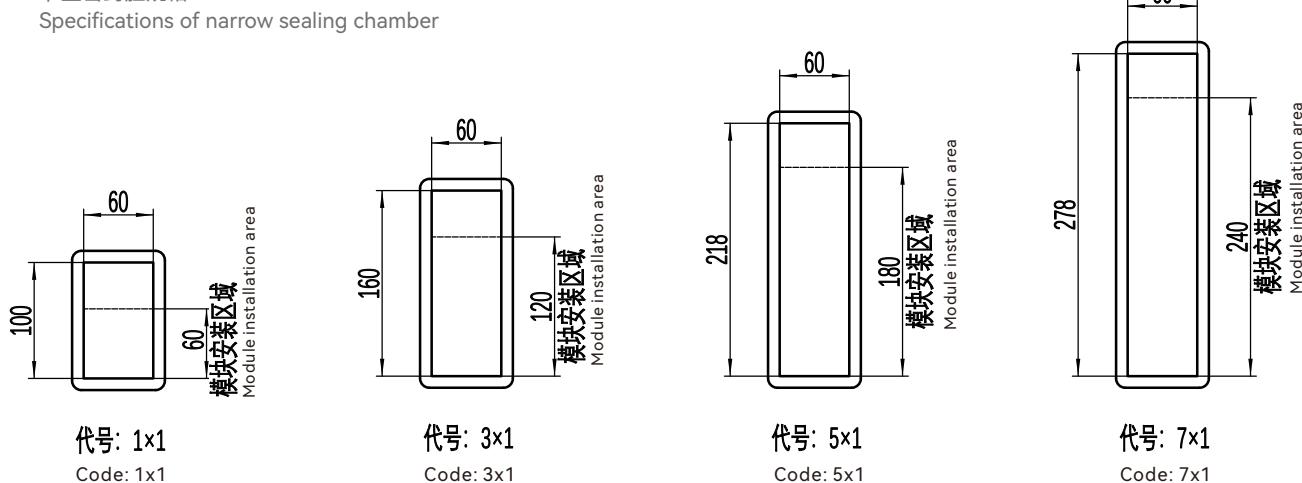
对列进行拓展（以4×1为基础）
Expand the column (based on 4 × 1)

1列
1 column

2列
2 column

1行
1 row

4×2

1列
1 column

2列
2 column

3列...
3 column

1行
1 row

4×3
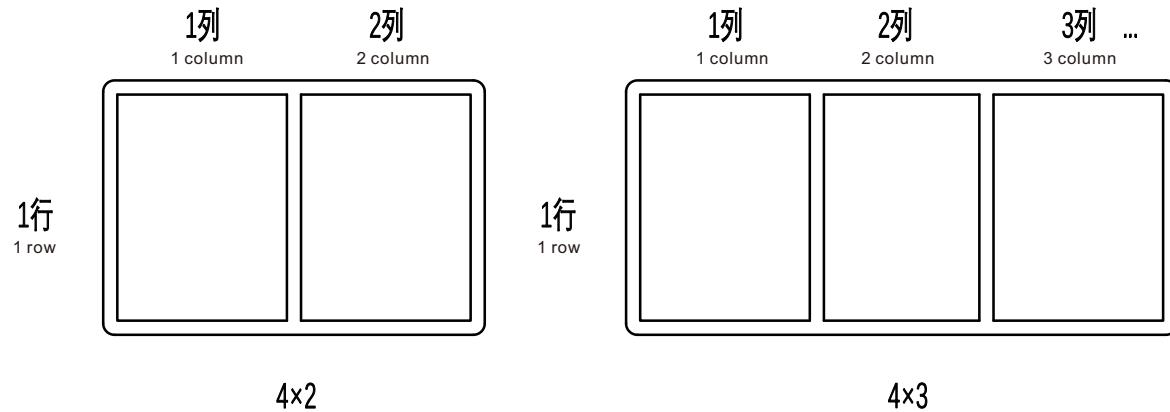
对行进行拓展（以4×1为基础）
Expand the row (based on 4 × 1)

对行、列同时进行拓展（以4×1为基础）
Expand both rows and columns
simultaneously (based on 4 × 1)

1列
1 column

1行
1 row

2行...
2 row

4+4×1

1列
1 column

1行
1 row

2行
2 row

3行...
3 row

4+4+4×1

1列
1 column

2列...
2 column

1行
1 row

2行
2 row...

4+4×2
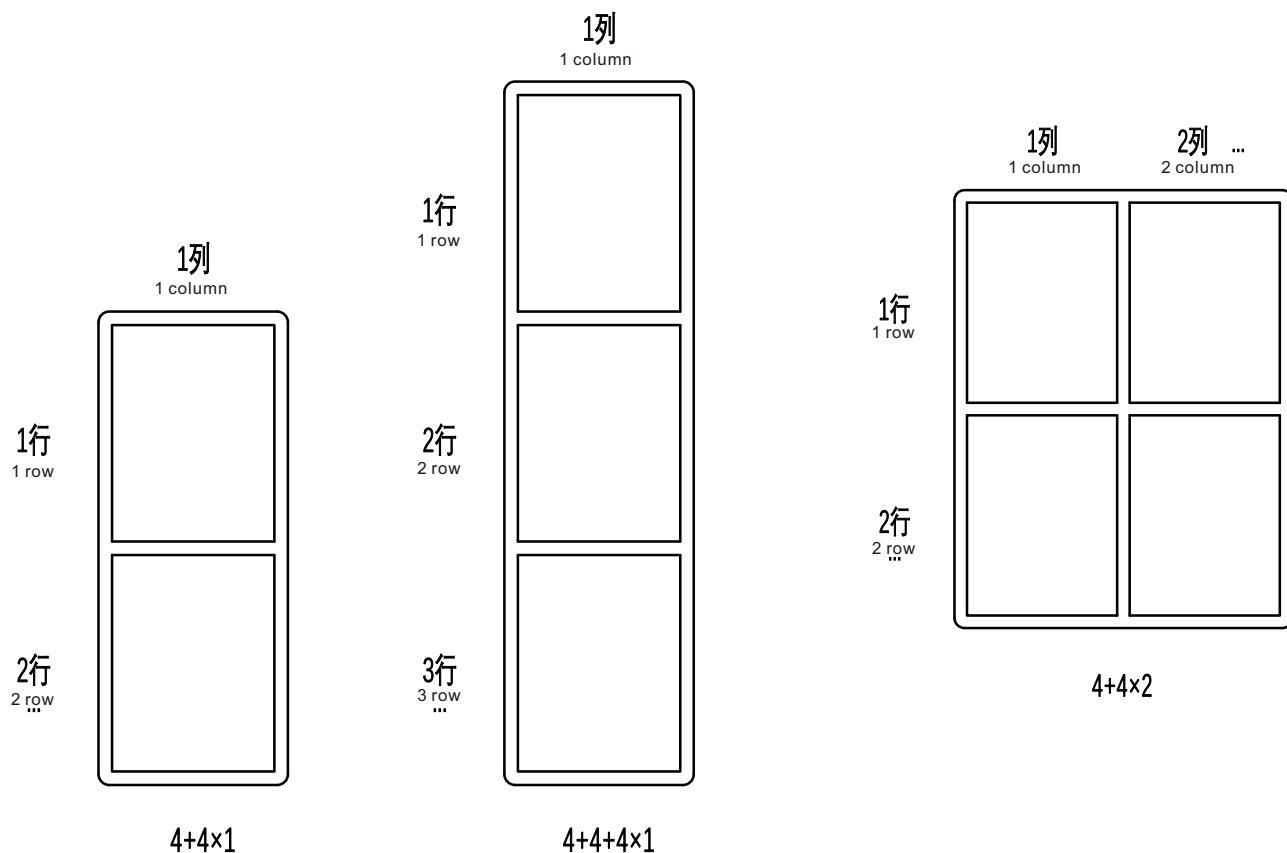
框架-矩形　FRAME – RECTANGLE

矩形焊接型框架　Rectangular welded frame

T SWF-X+X…X×N-AO矩形焊接框架
T SWF-X+X… X × N-AO rectangular welded frame
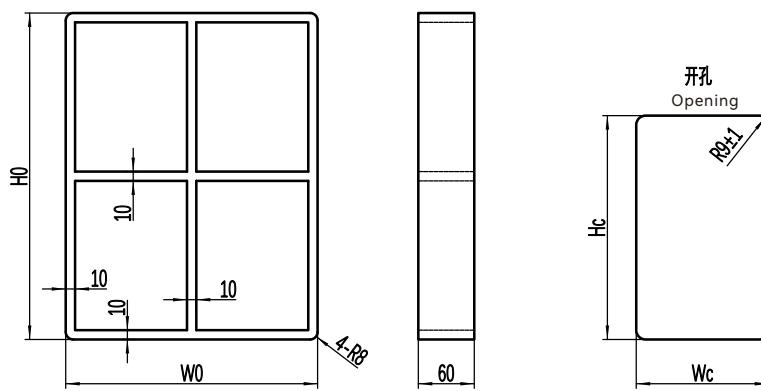
T SWF-X+X…X×N-AO型框架是一种焊接到精确开孔金属面板上的金属框架，它以不同的材料提供，并且在宽度和高度方向上含有单个或多个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可焊接在精确开孔尺寸的甲板或舱壁上，与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

T SWF-X+X… X × N-AO frame is a metal frame that is welded to precisely perforated metal panels and provided in different materials. It has a combination of single or multiple sealing cavity openings in the width and height directions.

Material: 304, 316L, Q345D (surface painting)
It can be welded on a deck or bulkhead with precise size of opening, and combined with other corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		开孔尺寸 Size of opening	
	W0	H0	Wc±1	Hc±1
T SWF-2×1-AO-316L	140	120	142	122
T SWF-2×2-AO-316L	270	120	272	122
T SWF-2×3-AO-316L	400	120	402	122
T SWF-2×4-AO-316L	530	120	532	122
T SWF-4×1-AO-316L	140	180	142	182
T SWF-4×2-AO-316L	270	180	272	182
T SWF-4×3-AO-316L	400	180	402	182
T SWF-4×4-AO-316L	530	180	532	182
T SWF-4×5-AO-316L	660	180	662	182
T SWF-4×6-AO-316L	790	180	792	182
T SWF-6×1-AO-316L	140	238	142	240
T SWF-6×2-AO-316L	270	238	272	240
T SWF-6×3-AO-316L	400	238	402	240
T SWF-6×4-AO-316L	530	238	532	240
T SWF-6×5-AO-316L	660	238	662	240
T SWF-6×6-AO-316L	790	238	792	240
T SWF-6×7-AO-316L	920	238	922	240
T SWF-6×8-AO-316L	1050	238	1052	240
T SWF-8×1-AO-316L	140	298	142	300
T SWF-8×2-AO-316L	270	298	272	300
T SWF-8×3-AO-316L	400	298	402	300
T SWF-8×4-AO-316L	530	298	532	300
T SWF-8×5-AO-316L	660	298	662	300
T SWF-8×6-AO-316L	790	298	792	300
T SWF-8×7-AO-316L	920	298	922	300
T SWF-8×8-AO-316L	1050	298	1052	300
T SWF-8×9-AO-316L	1180	298	1182	300
T SWF-8×10-AO-316L	1310	298	1312	300
T SWF-2+2×1-AO-316L	140	230	142	232
T SWF-2+2×2-AO-316L	270	230	272	232
T SWF-2+2×3-AO-316L	400	230	402	232
T SWF-2+2×4-AO-316L	530	230	532	232
T SWF-4+4×1-AO-316L	140	350	142	352
T SWF-4+4×2-AO-316L	270	350	272	352
T SWF-4+4×3-AO-316L	400	350	402	352
T SWF-4+4×4-AO-316L	530	350	532	352
T SWF-4+4×5-AO-316L	660	350	662	352
T SWF-4+4×6-AO-316L	790	350	792	352

型号 Model				
T SWF-6+6×1-AO-316L	140	466	142	468
T SWF-6+6×2-AO-316L	270	466	272	468
T SWF-6+6×3-AO-316L	400	466	402	468
T SWF-6+6×4-AO-316L	530	466	532	468
T SWF-6+6×5-AO-316L	660	466	662	468
T SWF-6+6×6-AO-316L	790	466	792	468
T SWF-6+6×7-AO-316L	920	466	922	468
T SWF-6+6×8-AO-316L	1050	466	1052	468
T SWF-8+8×1-AO-316L	140	586	142	588
T SWF-8+8×2-AO-316L	270	586	272	588
T SWF-8+8×3-AO-316L	400	586	402	588
T SWF-8+8×4-AO-316L	530	586	532	588
T SWF-8+8×5-AO-316L	660	586	662	588
T SWF-8+8×6-AO-316L	790	586	792	588
T SWF-8+8×7-AO-316L	920	586	922	588
T SWF-8+8×8-AO-316L	1050	586	1052	588
T SWF-6+6+6×1-AO-316L	140	694	142	696
T SWF-6+6+6×2-AO-316L	270	694	272	696
T SWF-6+6+6×3-AO-316L	400	694	402	696
T SWF-6+6+6×4-AO-316L	530	694	532	696
T SWF-8+8+8×1-AO-316L	140	874	142	876
T SWF-8+8+8×2-AO-316L	270	874	272	876
T SWF-8+8+8×3-AO-316L	400	874	402	876
T SWF-8+8+8×4-AO-316L	530	874	532	876

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		开孔尺寸 Size of opening	
	W0	H0	Wc±1	Hc±1
T SWF-1×1-AO-316L	80	120	82	122
T SWF-3×1-AO-316L	80	180	82	182
T SWF-5×1-AO-316L	80	238	82	240
T SWF-7×1-AO-316L	80	298	82	300
T SWF-1+1×1-AO-316L	80	230	82	232
T SWF-3+3×1-AO-316L	80	350	82	352
T SWF-5+5×1-AO-316L	80	466	82	468
T SWF-7+7×1-AO-316L	80	586	82	588

框架-矩形 FRAME – RECTANGLE

矩形焊接型框架　Rectangular welded frame

T SWF-X+X…X×N-RO矩形焊接框架
T SWF-X+X… X × N-RO rectangular welded frame
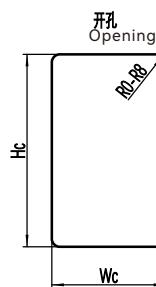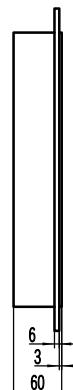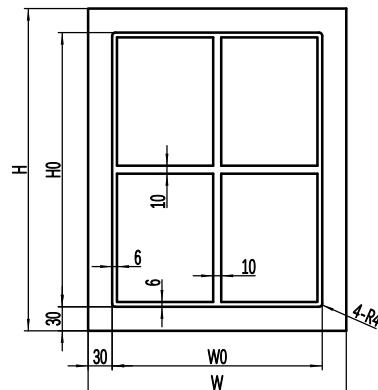
T SWF-X+X…X×N-RO型框架是一种通过框架法兰边（宽度30）焊接到粗开孔金属面板上的金属框架，粗开孔允许有较大的开孔范围，降低了难度，它以不同的材料提供，并且在宽度和高度方向上含有单个或多个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可焊接在有较大公差粗开孔尺寸的金属面板上，与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

T SWF-X+X… X × N-RO frame is a metal frame that is welded to a thick perforated metal panel through the flange edge of the frame (30 wide). The thick openings allow for a larger range of openings with reduced difficulty. It is provided in different materials, and contains a combination of single or multiple sealing cavity openings in the width and height directions

Material: 304, 316L, Q345D (surface painting)
It can be welded on metal panels with large tolerance and size of opening, and combined with other corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"

Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		法兰尺寸 Size of flange		开孔尺寸 Size of opening	
	W0	H0	W	H	Wc±8	Hc±8
T SWF-2×1-RO-316L	132	112	192	172	154	134
T SWF-2×2-RO-316L	262	112	322	172	284	134
T SWF-2×3-RO-316L	392	112	452	172	414	134
T SWF-2×4-RO-316L	522	112	582	172	544	134
T SWF-4×1-RO-316L	132	172	192	232	154	194
T SWF-4×2-RO-316L	262	172	322	232	284	194
T SWF-4×3-RO-316L	392	172	452	232	414	194
T SWF-4×4-RO-316L	522	172	582	232	544	194
T SWF-4×5-RO-316L	652	172	712	232	674	194
T SWF-4×6-RO-316L	782	172	842	232	804	194
T SWF-6×1-RO-316L	132	230	192	290	154	252
T SWF-6×2-RO-316L	262	230	322	290	284	252
T SWF-6×3-RO-316L	392	230	452	290	414	252
T SWF-6×4-RO-316L	522	230	582	290	544	252
T SWF-6×5-RO-316L	652	230	712	290	674	252
T SWF-6×6-RO-316L	782	230	842	290	804	252
T SWF-6×7-RO-316L	912	230	972	290	934	252
T SWF-6×8-RO-316L	1042	230	1102	290	1064	252
T SWF-8×1-RO-316L	132	290	192	350	154	312
T SWF-8×2-RO-316L	262	290	322	350	284	312
T SWF-8×3-RO-316L	392	290	452	350	414	312
T SWF-8×4-RO-316L	522	290	582	350	544	312
T SWF-8×5-RO-316L	652	290	712	350	674	312
T SWF-8×6-RO-316L	782	290	842	350	804	312
T SWF-8×7-RO-316L	912	290	972	350	934	312
T SWF-8×8-RO-316L	1042	290	1102	350	1064	312
T SWF-8×9-RO-316L	1172	290	1232	350	1194	312
T SWF-8×10-RO-316L	1302	290	1362	350	1324	312
T SWF-2+2×1-RO-316L	132	222	192	282	154	244
T SWF-2+2×2-RO-316L	262	222	322	282	284	244
T SWF-2+2×3-RO-316L	392	222	452	282	414	244
T SWF-2+2×4-RO-316L	522	222	582	282	544	244
T SWF-4+4×1-RO-316L	132	342	192	402	154	364
T SWF-4+4×2-RO-316L	262	342	322	402	284	364
T SWF-4+4×3-RO-316L	392	342	452	402	414	364
T SWF-4+4×4-RO-316L	522	342	582	402	544	364
T SWF-4+4×5-RO-316L	652	342	712	402	674	364
T SWF-4+4×6-RO-316L	782	342	842	402	804	364

Model						
T SWF-6+6×1-RO-316L	132	458	192	518	154	480
T SWF-6+6×2-RO-316L	262	458	322	518	284	480
T SWF-6+6×3-RO-316L	392	458	452	518	414	480
T SWF-6+6×4-RO-316L	522	458	582	518	544	480
T SWF-6+6×5-RO-316L	652	458	712	518	674	480
T SWF-6+6×6-RO-316L	782	458	842	518	804	480
T SWF-6+6×7-RO-316L	912	458	972	518	934	480
T SWF-6+6×8-RO-316L	1042	458	1102	518	1064	480
T SWF-8+8×1-RO-316L	132	578	192	638	154	600
T SWF-8+8×2-RO-316L	262	578	322	638	284	600
T SWF-8+8×3-RO-316L	392	578	452	638	414	600
T SWF-8+8×4-RO-316L	522	578	582	638	544	600
T SWF-8+8×5-RO-316L	652	578	712	638	674	600
T SWF-8+8×6-RO-316L	782	578	842	638	804	600
T SWF-8+8×7-RO-316L	912	578	972	638	934	600
T SWF-8+8×8-RO-316L	1042	578	1102	638	1064	600
T SWF-6+6+6×1-RO-316L	132	686	192	746	154	708
T SWF-6+6+6×2-RO-316L	262	686	322	746	284	708
T SWF-6+6+6×3-RO-316L	392	686	452	746	414	708
T SWF-6+6+6×4-RO-316L	522	686	582	746	544	708
T SWF-8+8+8×1-RO-316L	132	866	192	926	154	888
T SWF-8+8+8×2-RO-316L	262	866	322	926	284	888
T SWF-8+8+8×3-RO-316L	392	866	452	926	414	888
T SWF-8+8+8×4-RO-316L	522	866	582	926	544	888

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		法兰尺寸 Size of flange		开孔尺寸 Size of opening	
	W0	H0	W	H	Wc±1	Hc±1
T SWF-1×1-RO-316L	72	112	132	172	94	134
T SWF-3×1-RO-316L	72	172	132	232	94	194
T SWF-5×1-RO-316L	72	230	132	290	94	252
T SWF-7×1-RO-316L	72	290	132	350	94	312
T SWF-1+1×1-RO-316L	72	222	132	282	94	244
T SWF-3+3×1-RO-316L	72	342	132	402	94	364
T SWF-5+5×1-RO-316L	72	458	132	518	94	480
T SWF-7+7×1-RO-316L	72	578	132	638	94	600

框架-矩形 FRAME – RECTANGLE

矩形焊接型框架　　Rectangular welded frame

T SWF–R20–X+X…X×N矩形焊接框架
T SWF–R20–X+X… X × N rectangular welded frame
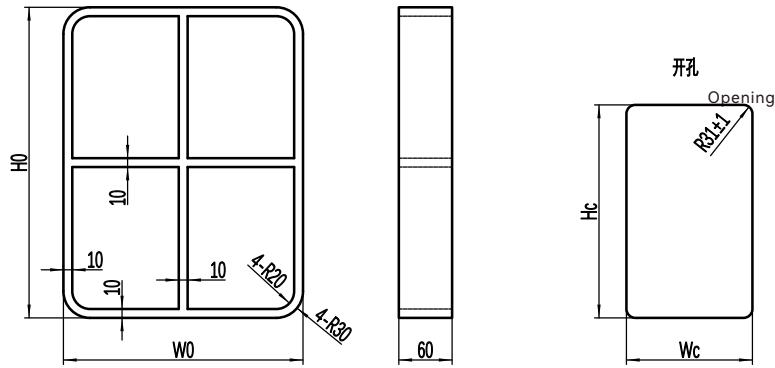
T SWF-R20-X+X…X×N框架是一种焊接到精确开孔金属面板上的金属框架，框架的四个角具有较大的圆角避免应力集中，它以不同的材料提供，并且在宽度和高度方向上含有单个或多个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可焊接在精确开孔尺寸的金属面板上，与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

T SWF-R20-X+X… X ×N-frame is a metal frame that is welded to precisely perforated metal panels, with large rounded corners at the four corners to avoid stress concentration. It is provided in different materials, and contains a combination of single or multiple sealing cavity openings in the width and height directions.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with precise size of opening, and combined with other corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm）Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"

Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号Model	框架尺寸 Size of frame		开孔尺寸 Size of opening	
	W0	H0	Wc±1	Hc±1
T SWF-R20-2×1-316L	140	120	142	122
T SWF-R20-2×2-316L	270	120	272	122
T SWF-R20-2×3-316L	400	120	402	122
T SWF-R20-2×4-316L	530	120	532	122
T SWF-R20-4×1-316L	140	180	142	182
T SWF-R20-4×2-316L	270	180	272	182
T SWF-R20-4×3-316L	400	180	402	182
T SWF-R20-4×4-316L	530	180	532	182
T SWF-R20-4×5-316L	660	180	662	182
T SWF-R20-4×6-316L	790	180	792	182
T SWF-R20-6×1-316L	140	238	142	240
T SWF-R20-6×2-316L	270	238	272	240
T SWF-R20-6×3-316L	400	238	402	240
T SWF-R20-6×4-316L	530	238	532	240
T SWF-R20-6×5-316L	660	238	662	240
T SWF-R20-6×6-316L	790	238	792	240
T SWF-R20-6×7-316L	920	238	922	240
T SWF-R20-6×8-316L	1050	238	1052	240
T SWF-R20-8×1-316L	140	298	142	300
T SWF-R20-8×2-316L	270	298	272	300
T SWF-R20-8×3-316L	400	298	402	300
T SWF-R20-8×4-316L	530	298	532	300
T SWF-R20-8×5-316L	660	298	662	300
T SWF-R20-8×6-316L	790	298	792	300
T SWF-R20-8×7-316L	920	298	922	300
T SWF-R20-8×8-316L	1050	298	1052	300
T SWF-R20-8×9-316L	1180	298	1182	300
T SWF-R20-8×10-316L	1310	298	1312	300
T SWF-R20-2+2×1-316L	140	230	142	232
T SWF-R20-2+2×2-316L	270	230	272	232
T SWF-R20-2+2×3-316L	400	230	402	232
T SWF-R20-2+2×4-316L	530	230	532	232
T SWF-R20-4+4×1-316L	140	350	142	352
T SWF-R20-4+4×2-316L	270	350	272	352
T SWF-R20-4+4×3-316L	400	350	402	352
T SWF-R20-4+4×4-316L	530	350	532	352
T SWF-R20-4+4×5-316L	660	350	662	352
T SWF-R20-4+4×6-316L	790	350	792	352

T SWF–R20–6+6×1–316L	140	466	142	468
T SWF–R20–6+6×2–316L	270	466	272	468
T SWF–R20–6+6×3–316L	400	466	402	468
T SWF–R20–6+6×4–316L	530	466	532	468
T SWF–R20–6+6×5–316L	660	466	662	468
T SWF–R20–6+6×6–316L	790	466	792	468
T SWF–R20–6+6×7–316L	920	466	922	468
T SWF–R20–6+6×8–316L	1050	466	1052	468
T SWF–R20–8+8×1–316L	140	586	142	588
T SWF–R20–8+8×2–316L	270	586	272	588
T SWF–R20–8+8×3–316L	400	586	402	588
T SWF–R20–8+8×4–316L	530	586	532	588
T SWF–R20–8+8×5–316L	660	586	662	588
T SWF–R20–8+8×6–316L	790	586	792	588
T SWF–R20–8+8×7–316L	920	586	922	588
T SWF–R20–8+8×8–316L	1050	586	1052	588
T SWF–R20–6+6+6×1–316L	140	694	142	696
T SWF–R20–6+6+6×2–316L	270	694	272	696
T SWF–R20–6+6+6×3–316L	400	694	402	696
T SWF–R20–6+6+6×4–316L	530	694	532	696
T SWF–R20–8+8+8×1–316L	140	874	142	876
T SWF–R20–8+8+8×2–316L	270	874	272	876
T SWF–R20–8+8+8×3–316L	400	874	402	876
T SWF–R20–8+8+8×4–316L	530	874	532	876

框架-矩形 FRAME – RECTANGLE

矩形焊接型框架　　Rectangular welded frame

T SWF–R40–X+X…X×N矩形焊接框架
T SWF–R40–X+X… X × N rectangular welded frame
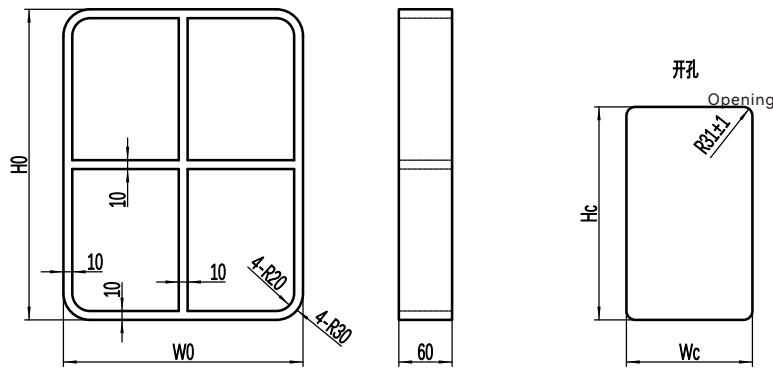
T SWF–R40–X+X…X×N型框架是一种焊接到精确开孔金属面板上的金属框架，框架的四个角具有较大的圆角避免应力集中，它以不同的材料提供，并且在宽度和高度方向上含有单个或多个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可焊接在精确开孔尺寸的金属面板上，与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

T SWF–R40–X+X… X × N-shaped frame is a metal frame that is welded to precisely perforated metal panels, with large rounded corners at the four corners to avoid stress concentration. It is provided in different materials and contains a combination of single or multiple sealing cavity openings in the width and height directions.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with precise hole sizes and combined with other corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"

Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		开孔尺寸 Size of opening	
	W0	H0	Wc±1	Hc±1
T SWF-R40-4×1-316L	140	180	142	182
T SWF-R40-4×2-316L	270	180	272	182
T SWF-R40-4×3-316L	400	180	402	182
T SWF-R40-4×4-316L	530	180	532	182
T SWF-R40-4×5-316L	660	180	662	182
T SWF-R40-4×6-316L	790	180	792	182
T SWF-R40-6×1-316L	140	238	142	240
T SWF-R40-6×2-316L	270	238	272	240
T SWF-R40-6×3-316L	400	238	402	240
T SWF-R40-6×4-316L	530	238	532	240
T SWF-R40-6×5-316L	660	238	662	240
T SWF-R40-6×6-316L	790	238	792	240
T SWF-R40-6×7-316L	920	238	922	240
T SWF-R40-6×8-316L	1050	238	1052	240
T SWF-R40-8×1-316L	140	298	142	300
T SWF-R40-8×2-316L	270	298	272	300
T SWF-R40-8×3-316L	400	298	402	300
T SWF-R40-8×4-316L	530	298	532	300
T SWF-R40-8×5-316L	660	298	662	300
T SWF-R40-8×6-316L	790	298	792	300
T SWF-R40-8×7-316L	920	298	922	300
T SWF-R40-8×8-316L	1050	298	1052	300
T SWF-R40-8×9-316L	1180	298	1182	300
T SWF-R40-8×10-316L	1310	298	1312	300
T SWF-R40-4+4×1-316L	140	350	142	352
T SWF-R40-4+4×2-316L	270	350	272	352
T SWF-R40-4+4×3-316L	400	350	402	352
T SWF-R40-4+4×4-316L	530	350	532	352
T SWF-R40-4+4×5-316L	660	350	662	352
T SWF-R40-4+4×6-316L	790	350	792	352
T SWF-R40-6+6×1-316L	140	466	142	468
T SWF-R40-6+6×2-316L	270	466	272	468
T SWF-R40-6+6×3-316L	400	466	402	468
T SWF-R40-6+6×4-316L	530	466	532	468
T SWF-R40-6+6×5-316L	660	466	662	468
T SWF-R40-6+6×6-316L	790	466	792	468
T SWF-R40-6+6×7-316L	920	466	922	468
T SWF-R40-6+6×8-316L	1050	466	1052	468

T SWF–R40–8+8×1–316L	140	586	142	588
T SWF–R40–8+8×2–316L	270	586	272	588
T SWF–R40–8+8×3–316L	400	586	402	588
T SWF–R40–8+8×4–316L	530	586	532	588
T SWF–R40–8+8×5–316L	660	586	662	588
T SWF–R40–8+8×6–316L	790	586	792	588
T SWF–R40–8+8×7–316L	920	586	922	588
T SWF–R40–8+8×8–316L	1050	586	1052	588
T SWF–R40–6+6+6×1–316L	140	694	142	696
T SWF–R40–6+6+6×2–316L	270	694	272	696
T SWF–R40–6+6+6×3–316L	400	694	402	696
T SWF–R40–6+6+6×4–316L	530	694	532	696
T SWF–R40–8+8+8×1–316L	140	874	142	876
T SWF–R40–8+8+8×2–316L	270	874	272	876
T SWF–R40–8+8+8×3–316L	400	874	402	876
T SWF–R40–8+8+8×4–316L	530	874	532	876

框架-矩形 FRAME – RECTANGLE

矩形栓接型框架   **Rectangular bolted frame**

T SBF – X+X…X×N–N/M/W矩形栓接框架
T SBF – X+X… X × N–N/M/W rectangular bolted frame
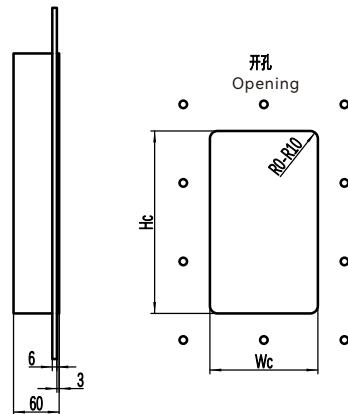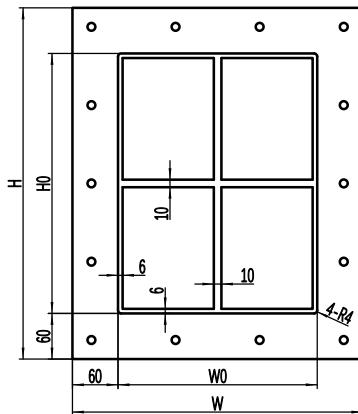
T SBF-X+X…X×N–N/M/W型框架是一种通过框架法兰（N/M/W代表不同的法兰尺寸，分别为40mm、60mm、100mm）栓接到金属或复合面板上的金属框架，它以不同的材料提供，并且在宽度和高度方向上含有单个或多个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可栓接在金属或复合面板上，与相应的密封垫等其它矩形密封配件组合使用可形成一套完整的密封系统

T SBF-X+X… X × The N–N/M/W type frame is a metal frame that is bolted to a metal or composite panel through a frame flange (N/M/W represents different flange sizes of 40mm, 60mm, 100mm). It is provided in different materials and contains a combination of single or multiple sealing cavity openings in the width and height directions.

Material: 304, 316L, Q345D (surface painting)
It can be bolted onto metal or composite panels and combined with other rectangular sealing accessories such as corresponding sealing pads to form a complete sealing system

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"

Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号Model	框架尺寸 Size of frame		法兰尺寸 Size of flange		开孔尺寸 Size of opening	
	W0	H0	W	H	Wc±5	Hc±5
T SBF-2×1-N/M/W-316L	132	112	252	232	152	132
T SBF-2×2-N/M/W-316L	262	112	382	232	282	132
T SBF-2×3-N/M/W-316L	392	112	512	232	412	132
T SBF-2×4-N/M/W-316L	522	112	642	232	542	132
T SBF-4×1-N/M/W-316L	132	172	252	292	152	192
T SBF-4×2-N/M/W-316L	262	172	382	292	282	192
T SBF-4×3-N/M/W-316L	392	172	512	292	412	192
T SBF-4×4-N/M/W-316L	522	172	642	292	542	192
T SBF-4×5-N/M/W-316L	652	172	772	292	672	192
T SBF-4×6-N/M/W-316L	782	172	902	292	802	192
T SBF-6×1-N/M/W-316L	132	230	252	350	152	250
T SBF-6×2-N/M/W-316L	262	230	382	350	282	250
T SBF-6×3-N/M/W-316L	392	230	512	350	412	250
T SBF-6×4-N/M/W-316L	522	230	642	350	542	250
T SBF-6×5-N/M/W-316L	652	230	772	350	672	250
T SBF-6×6-N/M/W-316L	782	230	902	350	802	250
T SBF-6×7-N/M/W-316L	912	230	1032	350	932	250
T SBF-6×8-N/M/W-316L	1042	230	1162	350	1062	250
T SBF-8×1-N/M/W-316L	132	290	252	410	152	310
T SBF-8×2-N/M/W-316L	262	290	382	410	282	310
T SBF-8×3-N/M/W-316L	392	290	512	410	412	310
T SBF-8×4-N/M/W-316L	522	290	642	410	542	310
T SBF-8×5-N/M/W-316L	652	290	772	410	672	310
T SBF-8×6-N/M/W-316L	782	290	902	410	802	310
T SBF-8×7-N/M/W-316L	912	290	1032	410	932	310
T SBF-8×8-N/M/W-316L	1042	290	1162	410	1062	310
T SBF-8×9-N/M/W-316L	1172	290	1292	410	1192	310
T SBF-8×10-N/M/W-316L	1302	290	1422	410	1322	310
T SBF-2+2×1-N/M/W-316L	132	222	252	342	152	242
T SBF-2+2×2-N/M/W-316L	262	222	382	342	282	242
T SBF-2+2×3-N/M/W-316L	392	222	512	342	412	242
T SBF-2+2×4-N/M/W-316L	522	222	642	342	542	242
T SBF-4+4×1-N/M/W-316L	132	342	252	462	152	362
T SBF-4+4×2-N/M/W-316L	262	342	382	462	282	362
T SBF-4+4×3-N/M/W-316L	392	342	512	462	412	362
T SBF-4+4×4-N/M/W-316L	522	342	642	462	542	362
T SBF-4+4×5-N/M/W-316L	652	342	772	462	672	362
T SBF-4+4×6-N/M/W-316L	782	342	902	462	802	362

型号 Model	W0	H0	W	H	Wc±1	Hc±1
T SBF-6+6×1-N/M/W-316L	132	458	252	578	152	478
T SBF-6+6×2-N/M/W-316L	262	458	382	578	282	478
T SBF-6+6×3-N/M/W-316L	392	458	512	578	412	478
T SBF-6+6×4-N/M/W-316L	522	458	642	578	542	478
T SBF-6+6×5-N/M/W-316L	652	458	772	578	672	478
T SBF-6+6×6-N/M/W-316L	782	458	902	578	802	478
T SBF-6+6×7-N/M/W-316L	912	458	1032	578	932	478
T SBF-6+6×8-N/M/W-316L	1042	458	1162	578	1062	478
T SBF-8+8×1-N/M/W-316L	132	578	252	698	152	598
T SBF-8+8×2-N/M/W-316L	262	578	382	698	282	598
T SBF-8+8×3-N/M/W-316L	392	578	512	698	412	598
T SBF-8+8×4-N/M/W-316L	522	578	642	698	542	598
T SBF-8+8×5-N/M/W-316L	652	578	772	698	672	598
T SBF-8+8×6-N/M/W-316L	782	578	902	698	802	598
T SBF-8+8×7-N/M/W-316L	912	578	1032	698	932	598
T SBF-8+8×8-N/M/W-316L	1042	578	1162	698	1062	598
T SBF-6+6+6×1-N/M/W-316L	132	686	252	806	152	706
T SBF-6+6+6×2-N/M/W-316L	262	686	382	806	282	706
T SBF-6+6+6×3-N/M/W-316L	392	686	512	806	412	706
T SBF-6+6+6×4-N/M/W-316L	522	686	642	806	542	706
T SBF-8+8+8×1-N/M/W-316L	132	866	252	986	152	886
T SBF-8+8+8×2-N/M/W-316L	262	866	382	986	282	886
T SBF-8+8+8×3-N/M/W-316L	392	866	512	986	412	886
T SBF-8+8+8×4-N/M/W-316L	522	866	642	986	542	886

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"

Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame		法兰尺寸 Size of flange		开孔尺寸 Size of opening	
	W0	H0	W	H	Wc±1	Hc±1
T SBF-1×1-N/M/W-316L	72	112	192	232	92	132
T SBF-3×1-N/M/W-316L	72	172	192	292	92	192
T SBF-5×1-N/M/W-316L	72	230	192	350	92	250
T SBF-7×1-N/M/W-316L	72	290	192	410	92	310
T SBF-1+1×1-N/M/W-316L	72	222	192	342	92	242
T SBF-3+3×1-N/M/W-316L	72	342	192	462	92	362
T SBF-5+5×1-N/M/W-316L	72	458	192	578	92	478
T SBF-7+7×1-N/M/W-316L	72	578	192	698	92	598

框架-矩形 FRAME – RECTANGLE

矩形栓接型框架　Rectangular bolted frame

T SGF鹅颈栓接框架
T SGF swanneck bolted frame
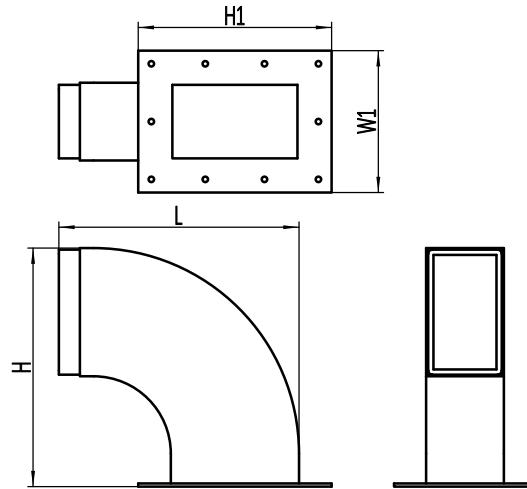
T SGF型框架是一种通过鹅颈形弯头框架法兰（宽度60）栓接到金属地板上的金属框架，适合安装于结构的外露顶面，避免电缆贯穿部位积水，它以不同的材料提供，含有1个或2个密封腔开孔的组合

材料：304、316L，Q345D（表面喷漆）
可栓接在金属面地板上，与相应的密封垫等其它矩形密封配件组合使用可形成一套完整的密封系统

T SGF frame is a metal frame that is bolted to the metal floor through a swanneck shaped elbow frame flange (60 wide), suitable for installation on the exposed top surface of the structure to avoid water accumulation in the cable penetration area. It is provided in different materials and contains a combination of 1 or 2 sealing cavity openings.

Material: 304, 316L, Q345D (surface painting)
It can be bolted to a metal surface floor and combined with other rectangular sealing accessories such as corresponding sealing pads to form a complete sealing system.

## 规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame 按T SWF-AO	鹅颈弯头尺寸 Size of swanneck bend		法兰尺寸 Size of flange		开孔尺寸Size of opening	
		L	H	W1	H1	Wc±8	Hc±8
T SGF-6×1-316L	T SWF-6×1-AO-316L	457	454	270	368	140	238
T SGF-6×2-316L	T SWF-6×2-AO-316L	457	454	400	368	270	238

框架-轻质 FRAME – LIGHTWEIGHT

TF 框架　TF Frame
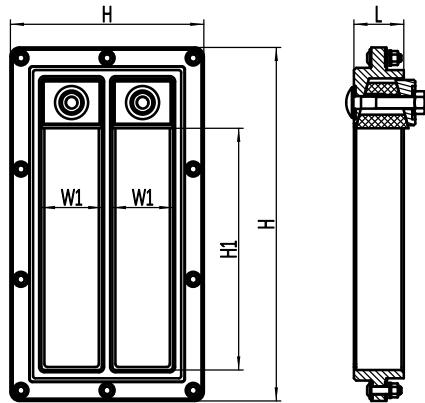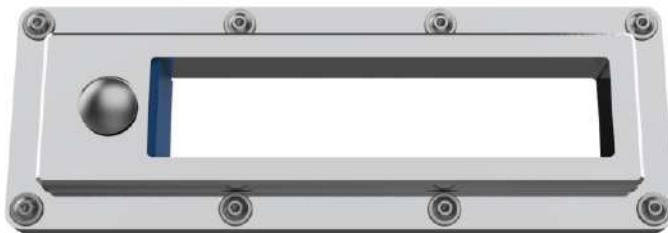
TF型框架是一种栓接到箱柜、金属或复合面板上的轻质框架，压紧件集成在框架内部，结构紧凑

材料：6061　表面处理：阳极化
可栓接在箱柜面板、金属或复合面板上，与相应的矩形密封配件组合使用可形成一套完整的密封系统

TF type frame is a lightweight frame that is bolted to cabinets, metal or composite panels, with compression components integrated inside the frame, so that it has a compact structure.

Material: 6061, surface treatment: anodizing
It can be bolted onto cabinet panels, metal or composite panels, and combined with corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm） Specification List (Unit: mm)

型号 Model	框架尺寸 Size of frame			密封腔尺寸 Size of sealing chamber		密封腔数量 Number of sealing chamber	开孔尺寸 Size of opening	
	W	H	L	W1	H1		Wc±1	Hc±1
TFA-80-6061	82	154	33	40	80	1	53	126
TFA-100-6061	82	174	33	40	100	1	53	146
TFA-120-6061	82	194	33	40	120	1	53	166
TFA-160-6061	82	234	33	40	160	1	53	206
TFB-160-6061	128	234	33	40	160	2	100	206

框架-轻质 FRAME – LIGHTWEIGHT

TE 框架　TE Frame
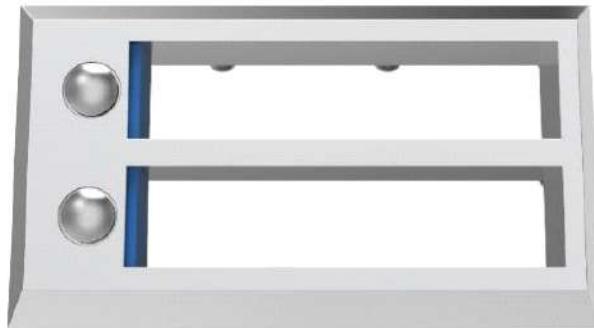
TE型框架是一种栓接到箱柜、金属或复合面板上的轻质框架，压紧件集成在框架内部，结构紧凑

材料：6061　表面处理：镀镍
可栓接在箱柜面板、金属或复合面板上，与相应的矩形密封配件组合使用可形成一套完整的密封系统
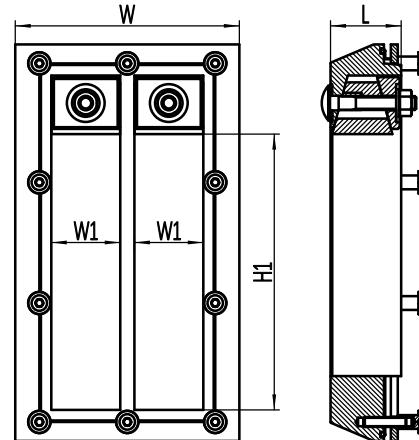
TE type frame is a lightweight frame that is bolted to cabinets, metal or composite panels, with compression components integrated inside the frame, so that it has a compact structure.

Material: 6061, surface treatment: nickel plating
It can be bolted onto cabinet panels, metal or composite panels, and combined with corresponding rectangular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

型号 Model	框架尺寸 Size of frame			密封腔尺寸 Size of sealing chamber		密封腔数量 Number of sealing chamber	开孔尺寸 Size of opening	
	W	H	L	W1	H1		Wc±1	Hc±1
TEB-160-6061	130	230	41	40	160	2	110	216

框架-轻质 FRAME – LIGHTWEIGHT

TG 框架　TG Frame

TG型框架是一种栓接到箱柜、金属或复合面板上的轻质框架，采用涨紧装置压紧，具有比其它轻质框架更高的密封能力

材料：6061　表面处理：阳极化
可栓接在箱柜面板、金属或复合面板上，与相应的矩形密封件组合使用可形成一套完整的密封系统
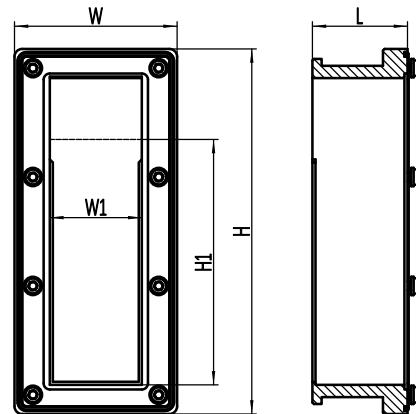
TG type frame is a lightweight frame that is bolted to cabinets, metal or composite panels. Compressed with tensioner, the frame has higher sealing capacity than other lightweight frames.

Material: 6061, surface treatment: anodizing
It can be bolted onto cabinet panels, metal or composite panels, and combined with corresponding rectangular sealing accessories to form a complete sealing system.

## 规格列表（单位：mm）　Specification List (Unit: mm)

型号 Model	框架尺寸			密封腔尺寸		密封腔数量 Number of sealing chamber	开孔尺寸	
	W	H	L	W1	H1		Wc±1	Hc±1
TGA-160-6061	106	238	62	60	160	1	69	209

套筒 SLEEVE

圆形焊接型套筒　Circular welded sleeve

T CWF-AO Series圆形焊接套筒（精密开孔）　　T CWF-AO Series circular welded sleeve（precision opening）

T CWF-AO Sereis型是一种焊接到精确开孔金属面板上的金属套筒，它以不同的材料提供，适配各型号圆形密封组件

材料：304、316L，Q345D（表面喷漆）
可焊接在精确开孔尺寸的金属面板上，与相应的其它圆形密封配件组合使用可形成一套完整的密封系统

The T CWF-AO Sereis sleeve is a metal sleeve that is welded to precision perforated metal panels, provided in different materials and suitable for various types of circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with precise size of opening, and combined with other circular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame			开孔尺寸 Size of opening
	ØD	ØD0	L	ØDc±1
T CWF-25-AO-316L	25.2	34	35	35
T CWF-31-AO-316L	31.2	40	35	41
T CWF-43-AO-316L	43.5	52	65	53
T CWF-50-AO-316L	50.5	61	65	62
T CWF-68-AO-316L	68.5	79	65	80
T CWF-75-AO-316L	75.5	86	65	87
T CWF-100-AO-316L	101	113	65	114
T CWF-125-AO-316L	126	138	65	139
T CWF-150-AO-316L	151	163	65	164
T CWF-175-AO-316L	177	189	65	190
T CWF-200-AO-316L	202	214	60	215
T CWF-250-AO-316L	252	264	60	265
T CWF-300-AO-316L	302	314	60	315
T CWF-350-AO-316L	352	364	60	365
T CWF-400-AO-316L	402	414	60	415
T CWF-53.5-AO-316L	54	64	60	65
T CWF-135-AO-316L	136	148	60	149
T CWF-80-AO-316L	81	91	60	92
T CWF-120-AO-316L	122	132	60	133
T CWF-140-AO-316L	142	154	60	155

套筒 SLEEVE

圆形焊接型套筒 Circular welded sleeve

T CWF-RT-AO Series圆形焊接套筒（精密开孔）　　T CWF-RT-AO Series circular welded sleeve(precision opening)
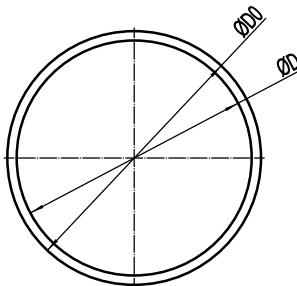
T CWF-RT-AO Series是一种焊接到精确开孔金属面板上的金属套筒，它以不同的材料提供，适配 T TCS Series和T RES Series圆形密封组件

材料：304、316L，Q345D（表面喷漆）
可焊接在精确开孔尺寸的金属面板上，与相应的其它圆形密封配件组合使用可形成一套完整的密封系统

The T CWF-RT-AO Series sleeve is a metal sleeve that is welded to precision perforated metal panels, provided in different materials, and suitable for T TCS Series and T RES Series circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with precise size of opening, and combined with other circular sealing accessories to form a complete sealing system.

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸Size of frame			开孔尺寸 Size of opening
	ØD	ØD0	L	ØDc±1
T CWF-RT-53.5-AO-316L	54	64	60	65
T CWF-RT-135-AO-316L	136	148	60	149
T CWF-RT-80 – AO-316L	81	91	60	92
T CWF-RT-120-AO-316L	122	132	60	133
T CWF-RT-140-AO-316L	142	154	60	155
T CWF-RT-200-AO-316L	202	214	60	215

套筒 SLEEVE

圆形焊接型套筒　Circular welded sleeve

T CWF-RO Series圆形焊接套筒（粗开孔）　T CWF-RO Series circular welded sleeve (coarse opening)
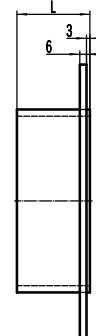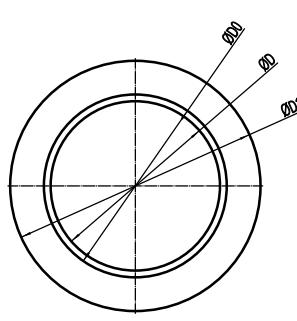
T CWF-RO Series型是一种通过框架法兰边（宽度30）焊接到粗开孔金属面板上的金属套筒，粗开孔允许有较大的开孔范围，降低了难度，它以不同的材料提供，适配各型号圆形密封组件

材料：304、316L、Q345D（表面喷漆）
可焊接在有较大公差粗开孔尺寸的金属面板上，与相应的其它圆形密封配件组合使用可形成一套完整的密封系统

The T CWF-RO Series sleeve is a metal sleeve that is welded to a thick perforated metal panel through the flange edge of the frame (width 30). The thick openings allow for a larger range of openings with reduced difficulty. It is provided in different materials and is suitable for various types of circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with large tolerance and size of opening, and can be combined with other circular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame			法兰尺寸 Size of flange	开孔尺寸 Size of opening
	ØD	ØD0	L	ØD1	ØDc±8
T CWF-25-RO-316L	25.2	34	35	94	56
T CWF-31-RO-316L	31.2	40	35	100	62
T CWF-43-RO-316L	43.5	52	65	112	74
T CWF-50-RO-316L	50.5	61	65	121	83
T CWF-68-RO-316L	68.5	79	65	139	101
T CWF-75-RO-316L	75.5	86	65	146	108
T CWF-100-RO-316L	101	113	65	173	135
T CWF-125-RO-316L	126	138	65	198	160
T CWF-150-RO-316L	151	163	65	223	185
T CWF-175-RO-316L	177	189	65	249	211
T CWF-200-RO-316L	202	214	60	274	236
T CWF-250-RO-316L	252	264	60	324	286
T CWF-300-RO-316L	302	314	60	374	336
T CWF-350-RO-316L	352	364	60	424	386
T CWF-400-RO-316L	402	414	60	474	436
T CWF-53.5-RO-316L	54	64	60	124	86
T CWF-135-RO-316L	136	148	60	208	170
T CWF-80-RO-316L	81	91	60	151	113
T CWF-120-RO-316L	122	132	60	192	154
T CWF-140-RO-316L	142	154	60	214	176

套筒 SLEEVE

圆形焊接型套筒　Circular welded sleeve

T CWF-RT-RO Series套筒（粗开孔）　T CWF-RT-RO Series circular welded sleeve (coarse opening)
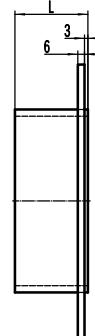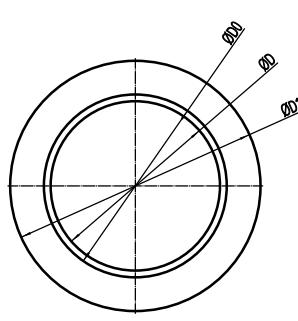
T CWF-RT-RO Series型是一种通过框架法兰边（宽度30）焊接到粗开孔金属面板上的金属套筒，粗开孔允许有较大的开孔范围，降低了难度，它以不同的材料提供，适配 T TCS Series和T RES Series圆形密封组件

材料：304、316L，Q345D（表面喷漆）
可焊接在有较大公差粗开孔尺寸的金属面板上，与相应的其它圆形密封配件组合使用可形成一套完整的密封系统

T CWF-RT-RO Series sleeve is a metal sleeve that is welded to a thick perforated metal panel through the flange edge of the frame (width 30). The thick openings allow for a larger range of openings with reduced difficulty. It is provided in different materials and is suitable for T TCS Series and T RES Series circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be welded onto metal panels with large tolerance and size of opening, and can be combined with other circular sealing accessories to form a complete sealing system.

规格列表（单位：mm）　Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame			法兰尺寸 Size of flange	开孔尺寸 Size of opening
	ØD	ØD0	L	ØD1	ØDc±8
T CWF-RT-53.5-RO-316L	54	64	60	124	86
T CWF-RT-135-RO-316L	136	148	60	208	170
T CWF-RT-80 - RO-316L	81	91	60	151	113
T CWF-RT-120-RO-316L	122	132	60	192	154
T CWF-RT-140-RO-316L	142	154	60	214	176
T CWF-RT-200-RO-316L	202	214	60	274	236

套筒 SLEEVE

圆形栓接型套筒　Circular bolted frame sleeve

T CBF-N/M/W Series圆形栓接套筒　T CBF-N/M/W Series circular bolted sleeve
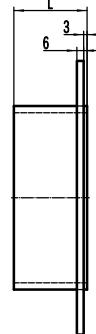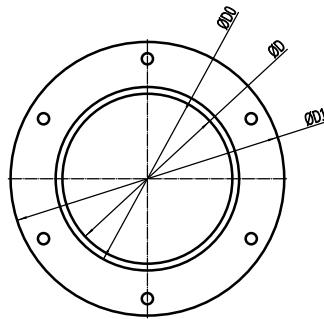
T CBF-N/M/W Series型套筒是一种通过框架法兰（N/M/W代表不同的法兰尺寸，分别为40mm、60mm、100mm）栓接到金属或复合面板上的金属套筒，它以不同的材料提供，适配各型号圆形密封组件

材料：304、316L，Q345D（表面喷漆）
可栓接在金属或复合面板上，与相应的密封垫等其它圆形密封配件组合使用可形成一套完整的密封系统

The T CBF-N/M/W Series sleeve is a metal sleeve that is bolted to a metal or composite panel through a frame flange (N/M/W represents different flange sizes of 40mm, 60mm, 100mm). It is provided in different materials and is suitable for various types of circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be bolted onto metal or composite panels and combined with other circular sealing accessories such as corresponding sealing pads to form a complete sealing system.

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸 Size of frame			法兰尺寸 Size of flange			开孔尺寸 Size of opening
	ØD	ØD0	L	ØD1			ØDc±3
				N	M	W	
T CBF-25-N/M/W-316L	25.2	34	35	114	134	174	41
T CBF-31-N/M/W-316L	31.2	40	35	120	140	180	47
T CBF-43-N/M/W-316L	43.5	52	65	132	152	192	59
T CBF-50-N/M/W-316L	50.5	61	65	141	161	201	68
T CBF-68-N/M/W-316L	68.5	79	65	159	179	219	86
T CBF-75-N/M/W-316L	75.5	86	65	166	186	226	93
T CBF-100-N/M/W-316L	101	113	65	193	213	253	120
T CBF-125-N/M/W-316L	126	138	65	218	238	278	145
T CBF-150-N/M/W-316L	151	163	65	243	263	303	170
T CBF-175-N/M/W-316L	177	189	65	269	289	329	196
T CBF-200-N/M/W-316L	202	214	60	294	314	354	221
T CBF-250-N/M/W-316L	252	264	60	344	364	404	271
T CBF-300-N/M/W-316L	302	314	60	394	414	454	321
T CBF-350-N/M/W-316L	352	364	60	444	464	504	371
T CBF-400-N/M/W-316L	402	414	60	494	514	554	421

套筒 SLEEVE

圆形栓接型套筒 Circular bolted frame sleeve

T CBF-RT-M Series圆形栓接套筒　　T CBF-RT-M Series circular bolted sleeve
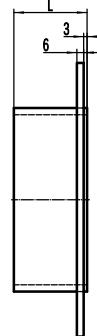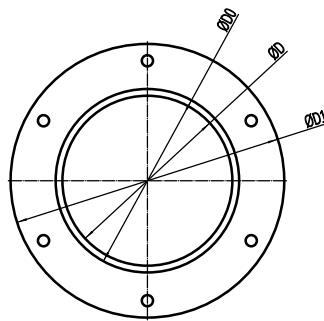
T CBF-RT-M Series型套筒是一种通过框架法兰（N/M/W代表不同的法兰尺寸，分别为40mm、60mm、100mm）栓接到金属或复合面板上的套筒，它以不同的材料提供，适配T TCS Series和T RES Series圆形密封组件

材料：304、316L，Q345D（表面喷漆）
可栓接在金属或复合面板上，与相应的密封垫等其它圆形密封配件组合使用可形成一套完整的密封系统

The T CBF-RT-M Series sleeve is a metal sleeve that is bolted to a metal or composite panel through a frame flange (N/M/W represents different flange sizes of 40mm, 60mm, 100mm). It is provided in different materials and is suitable for T TCS Series and T RES Series circular sealing components.

Material: 304, 316L, Q345D (surface painting)
It can be bolted onto metal or composite panels and combined with other circular sealing accessories such as corresponding sealing pads to form a complete sealing system.

规格列表（单位：mm） Specification List (Unit: mm)

注：列表型号框架的材料为316L，如需304、Q345D材料，请将对应型号的尾号"316L"更改为"304"、"Q345D"
Note: The material of the model frame in the list is 316L. If 304 and Q345D material is required, change the rear number "316L" of the corresponding model to "304" and "Q345D".

型号 Model	框架尺寸Size of frame			法兰尺寸Size of flange	开孔尺寸 Size of opening
	ØD	ØD0	L	ØD1	ØDc±3
T CBF-RT-53.5-N/M/W-316L	54	64	60	124	80
T CBF-RT -135-N/M/W-316L	136	148	60	208	170
T CBF-RT -80 - N/M/W-316L	81	91	60	151	113
T CBF-RT -120-N/M/W-316L	122	132	60	192	154
T CBF-RT -140-N/M/W-316L	142	154	60	214	176
T CBF-RT -200-N/M/W-316L	202	214	60	274	236

其它密封配件 OTHER SEALING ACCESSORIES

润滑脂 lubricating grease

SL-55润滑脂
SL-55 lubricating grease

SL-55润滑脂是所有密封系统安装的必要组件，用于对密封模块、涨紧装置和框架内部进行润滑，安装时涂抹于模块或其它配件表面，简化了安装，并提供正确的压紧和可靠的密封

与相应的其它矩形密封配件组合使用可形成一套完整的密封系统

SL-55 grease is a necessary component for the installation of all sealing systems, used to lubricate sealing modules, tensioners, and the interior of frames. It is applied to the surface of modules or other accessories during installation, simplifying installation and providing correct compression and reliable sealing.

Form a complete sealing system in combination with other corresponding rectangular sealing accessories.

规格列表（单位：ml）Specification List (Unit: ml)

型号 Model	容量 Capacity
SL-55	16

安装与拆卸专用工具

SPECIAL TOOLS FOR INSTALLATION AND DISASSEMBLY

安装工具 Installation tools

型号1：T-Tool-006 模块压缩器120　　　Model 1: T-Tool-006 Module Compressor 120
型号2：T-Tool-007 模块压缩器60　　　　Model 2: T-Tool-007 Module Compressor 60

模块压缩器是安装矩形密封系统的必要工具,初始安装在矩形密封腔内的密封模块处于松弛状态,往往很难装入楔形涨紧装置。
此时,使用压缩器对腔体内的密封模块进行预压缩,可为楔形涨紧装置压缩出足够的安装空间,使其更容易塞入,尤其是密封腔内电缆密集时，还应在模块安装至一半时用T-Tool-002 压缩顶杆进行预压缩。

The module compressor is a necessary tool for installing a rectangular sealing system. The sealing module which is initially installed in the rectangular sealing chamber is in a relaxed state, and therefore it is often difficult to install the module into a wedge-shaped tensioning device.
A compressor is then used to pre-compress the sealing module inside the chamber, which can compress enough installation space for the wedge-shaped tensioning device to for easier plug-in. Especially when the cables in the sealing chamber are densely packed, T-Tool-002 should also be used to pre-compress the top rod when the module is halfway installed.

型号T-Tool-006适用于宽度为120mm的密封腔（2，4，6，8），型号T-Tool-007适用于宽度为60mm的密封腔（1，3，5，7）
T-Tool-006 model is suitable for sealing chambers with a width of 120mm (2, 4, 6, 8), and T-Tool -007 model is suitable for sealing chambers with a width of 60mm (1, 3, 5, 7).

型号：T-Tool-002 压缩顶杆
压缩顶杆适用于对密封腔高度较大（6，8，5，7）的模块组进行先期预压紧，压缩已安装的模块，给后续安装腾出更多的空间，最大压缩高度为90mm

Model: T-Tool-002 compression top rod
The compression top rod is suitable for pre-pressing module groups with high sealing chamber heights (6, 8, 5, 7). The installed modules can be compressed to make more space for subsequent installation,with the maximum compression height of 90mm

安装与拆卸专用工具

SPECIAL TOOLS FOR INSTALLATION AND DISASSEMBLY

安装工具 Installation tools

型号：T-Tool-004 压紧杠杆

T-Tool-004压紧顶杆适用于对密封腔高度较小（2，4）的模块组进行压紧，是更为便利的压缩工具。

Model: T-Tool-004 compression lever

T-Tool-004 compression top rod is a more convenient compression tool since it is suitable for compressing module groups with smaller sealing chamber heights (2, 4).

型号：T-Tool-011 限位器

卡块器适用于对垂直安装的框架内的已安装模块、电缆、隔板进行临时的固定，当某个密封腔只安装了一部分密封配件需要离开时，使用卡块器对已安装部分进行固定，可防止密封模块跌落

Model: T-Tool-011 limiter

The card holder is suitable for temporary fixation of installed modules, cables, and partitions within a vertically installed frame,
When only a portion of the sealing accessories are installed in a certain sealing chamber, a clamp can be used to fix the installed part to prevent the sealing module from falling off.

安装与拆卸专用工具

SPECIAL TOOLS FOR INSTALLATION AND DISASSEMBLY

拆卸工具 Disassembly tool

型号：T-Tool-001 楔形涨紧块拔出器

对已完成安装的密封系统，在增加或更换电缆时，可采用楔形涨紧装置拔出器从密封系统中拔出楔形涨紧装置。

Model: T-Tool-001 Wedge type tensioning block extractor

For the installed sealing system, a wedge type tensioning device extractor can be used to pull out the wedge type tensioning device from the sealing system at the time of addition or replacement of cables.

密封模块安装示意 INSTALLATION DIAGRAM OF SEALING MODULE

矩形电缆&管道穿隔密封模块安装 Installation of rectangular cable and pipeline insulation sealing module
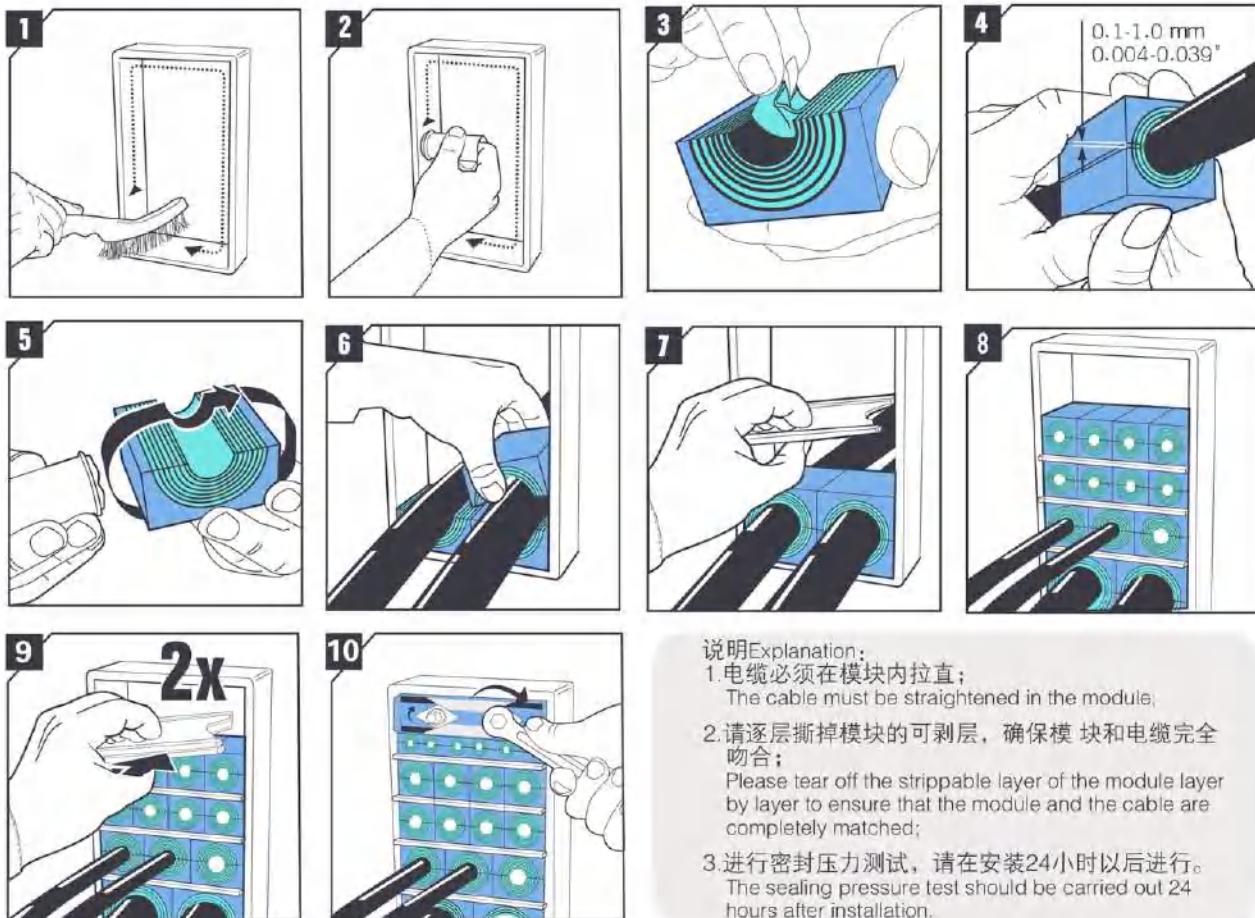
说明Explanation:
1. 电缆必须在模块内拉直;
   The cable must be straightened in the module;
2. 请逐层撕掉模块的可剥层,确保模块和电缆完全吻合;
   Please tear off the strippable layer of the module layer by layer to ensure that the module and the cable are completely matched;
3. 进行密封压力测试,请在安装24小时以后进行。
   The sealing pressure test should be carried out 24 hours after installation.

1. 确保密封框架已固定,将框架内侧清理干净;
   Make sure that the sealing frame is fixed and clean the inner side of the frame;
2. 在框架内壁涂抹润滑脂;
   Apply grease on the inner wall of the frame;
3. 根据电缆外径选择适应的密封模块,撕去薄片,保证模块与电缆紧密适应;
   Select the suitable sealing module according to the outer diameter of the cable, tear off the sheet to ensure that the module and the cable are closely adapted;
4. 模块与电缆吻合后,模块之间的缝隙应在0.1-1毫米之间;
   The gap between modules should be 0.1-1 mm after the module and cable are matched;
5. 将模块内侧和外部涂抹润滑脂;
   Apply grease on the inside and outside of the module;
6. 根据设计图纸,将模块摆放在框架内侧,模块端面与框架端面保持整齐;
   According to the design drawings, the module is placed inside the frame, and the end face of the module and the end face of the frame are kept in order;
7. 装好一层模块以后,放置一片隔层板,隔层板需卡在框架上,防止模块窜动;
   After the first floor module is installed, a partition board should be placed. The partition board should be stuck on the frame to prevent the module from moving;
8. 依据以上方式逐层安装模块;
   Install the modules layer by layer according to the above methods;
9. 在安装最后一层模块时,先放入2片隔层板,以免模块安装结束以后没有空间放入隔层板;
   When installing the last layer module, put two partition boards first, so as to avoid that there is no space to put the partition board after the module installation;
10. 将压紧块放入框架(安装方式见压紧块表面张贴的标识),顺时针旋转紧固螺丝,直至完全紧固。如果必要,可在压紧块上下俩个端面适当涂抹润滑脂,以方便安装与密封。
    Put the pressing block into the frame (see the mark on the surface of the pressing block for the installation method), and turn the fastening screw clockwise until it is completely tightened. If necessary, grease the upper and lower ends of the pressing block to facilitate installation and sealing.

密封模块安装示意 INSTALLATION DIAGRAM OF SEALING MODULE

圆形多根电缆&管道密封装置安装 Installation of circular multiple cables and pipeline sealing devices
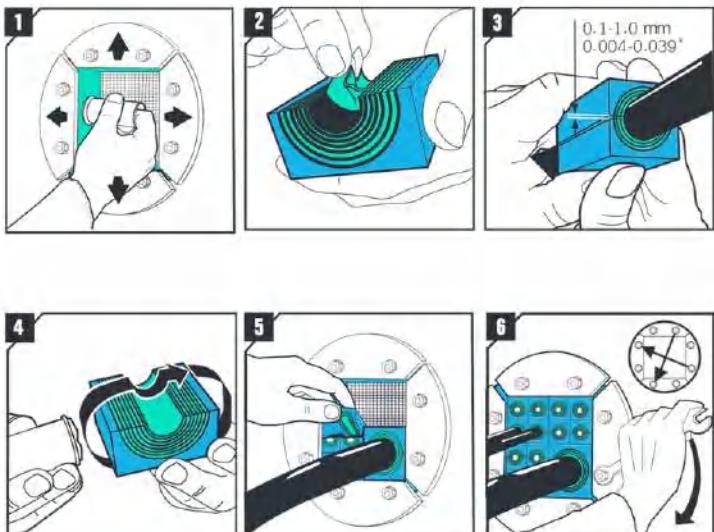
1. 选取对应的圆形密封装置，将套管的内壁清理 干净，并在密封件内侧方形部分涂抹润滑脂；
   Select the matched round seal to clean the inner wall of the sleeve and smear lubrications in the square parts inside the seal.

2. 根据电缆外径选择适应的密封模块，撕去薄片，保证模块与电缆紧密适应；
   Select appropriate seal modules and tear up the removable layer, to ensure the modules and cables adapted closely.

3. 模块与电缆吻合后，模块之间的缝隙应在0.1~1毫米之间；
   After the modules matched with cables, the gaps between modules should be in the range of 0.1~1mm.

4. 将模块内侧和外部涂抹润滑脂；
   Smear lubrication both inner and outer parts of modules.

5. 根据设计图纸，将电缆和模块放置到框架方形空间内，模块端面与装置的端面保持整齐；
   According to the design drawings, the cables and modules are placed in the square space of the frame, and kept accordant between the end surfaces of the module and the device.

6. 将装置放置到套管内壁，按对角顺序，依次拧紧紧固螺丝，直至紧固。
   Place the device on the inner wall of sleeve, and tighten the fastening screws respectively in diagonal sequence, up to tighten effect.

圆形单根电缆&管道穿隔密封系统安装 Installation of circular single cable and pipeline insulation and sealing system
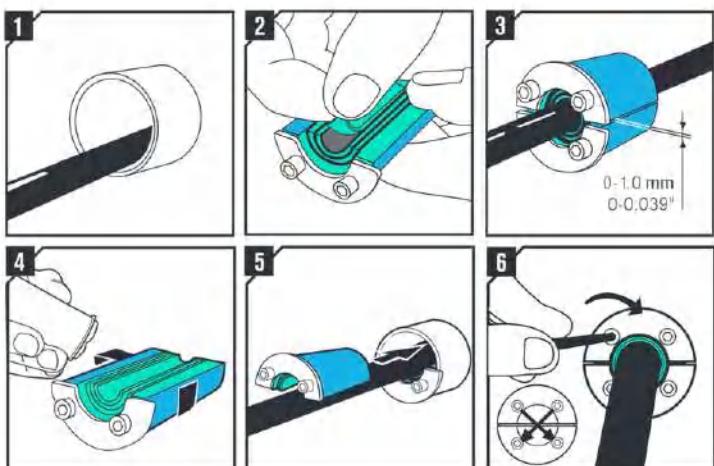
1. 检查并确定外护套管已固定，将套管内壁清理干净；
   Check and confirm that the outer sheath is fixed, then clean the inner wall of the sleeve.

2. 根据电缆外径选取适应的密封装置与之配合，撕掉可剥层，以使装置的内径与电缆适合；
   Select appropriate seal modules and tear up the removable layer, to ensure the inner diameter of the device fit for cable.

3. 俩个半圆装置与电缆吻合后之间的缝隙应在0.1~1毫米之间；
   The gap between the two semicircular devices fit for cable is in the range from 0.1 to 1 mm.

4. 在密封装置的内侧和外侧涂抹润滑脂；
   Smear lubrication both inner and outer parts of seal.

5. 将密封装置放置到套管内，端面对齐；
   Place the seal into the sleeve with the end faces aligned.

6. 按对角顺序，依次拧紧紧固螺丝，直至紧固。
   Tighten the fastening screws respectively in diagonal.

注意：
Warning: 请逐层撕掉装置的可剥层薄片，确保装置和电缆完全吻合。
Please tear off the removable slice of the device layer by layer, to make sure that the device and cable are perfectly fit.

选择与使用电缆密封模块注意事项
Considerations for selecting and using cable sealing module

1. 模块的选择：电缆穿越墙体、船舱甲板等工况时一般选择TSC-M模块，即长度是60毫米的模块，用于穿越机柜、设备壳体等一般选择TSC-M-1/2模块，即长度是30毫米的模块；
Module selection: TSC-M module, i.e. 60mm module, is generally selected when the cable passes through the wall, cabin deckano other working concitons: TSC-M-1/2 module, i.e. 30mm module. is cenerally serected when the cable passes through the cabinetand equipment shell;

2. 框架材质的选择：框架一般用于室外场所，建议选择不锈钢材质的密封框架；
Selection of frame material: the frame is generally used in outdoor places, and it is recommended to choose stainless steel sealed frame;

3. 模块的预留数量：电缆密封模块在设计时一般按照30-40%比例预留，以满足后续改动需求，另外不建议预留部分采用实心模块，如有增加线缆仍需采购模块，造成不必要的浪费；
Reserved number of modules: the cable sealing module is generally reserved according to the proportion of 30-40% in the design to meet the needs of subsequent changes. In addition, it is not recommended to use solid module for the reserved part. If the cable is added, the module still needs to be purchased, causing unnecessary waste;

4. 模块的安装：产品的安装应该安装说明书进行，注意润滑脂的使用，润滑脂使用与否直接影响密封效果；
Module installation: the product should be installed according to the installation instructions. Pay attention to the use of grease. The use of grease directly affects the sealing effect;

5. 模块的采购：模块的采购应该严格依据设计图纸进行，图纸应该标明框架和模块的型号等详细信息。
Module procurement: module procurement should be carried out in strict accordance with the design drawings, which should indicate the detailed information such as the frame and module model.

电缆模块设计方案需要具备的条件
Requirements of cable module design scheme

1. 开孔情况：现场是否有预留孔洞，预留孔洞尺寸是否符合设计要求，如需扩充，现场条件是否允许；
Opening conditions: whether there are reserved holes on site, whether the size of reserved holes meets the design requirements, and whether the site conditions allow for expansion if necessary;

2. 电缆数量及外径：电缆的数量以及每根电缆的外径，电缆外径最好依据本次施工选用的电缆厂家的技术参数表来查询；
Number and outer diameter of cables: the number of cables and outer diameter of each cable. The outer diameter of the cable should be inquired according to the technical parameter table of the cable manufacturer selected for this construction;

3. 预留比例：如没有后续工程衔接，一般设计预留比例为30-40%，特殊情况另议；
Reservation ratio: if there is no connection of follow-up projects, the general design reservation ratio is 30-40%, and it will be discussed in special cases;

4. 框架型号和材质：根据现场情况选择对应的框架型号，不同的框架在占用空间、抗压、防爆都不一样，框架材质一般建议选择不锈钢；
Frame model and material: select the corresponding frame model according to the site conditions. Different frames have different space occupation, compression resistance and explosion protection. Generally, stainless steel is recommended as the frame material;

5. 其他设计的必要条件。
Other necessary conditions for design.

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