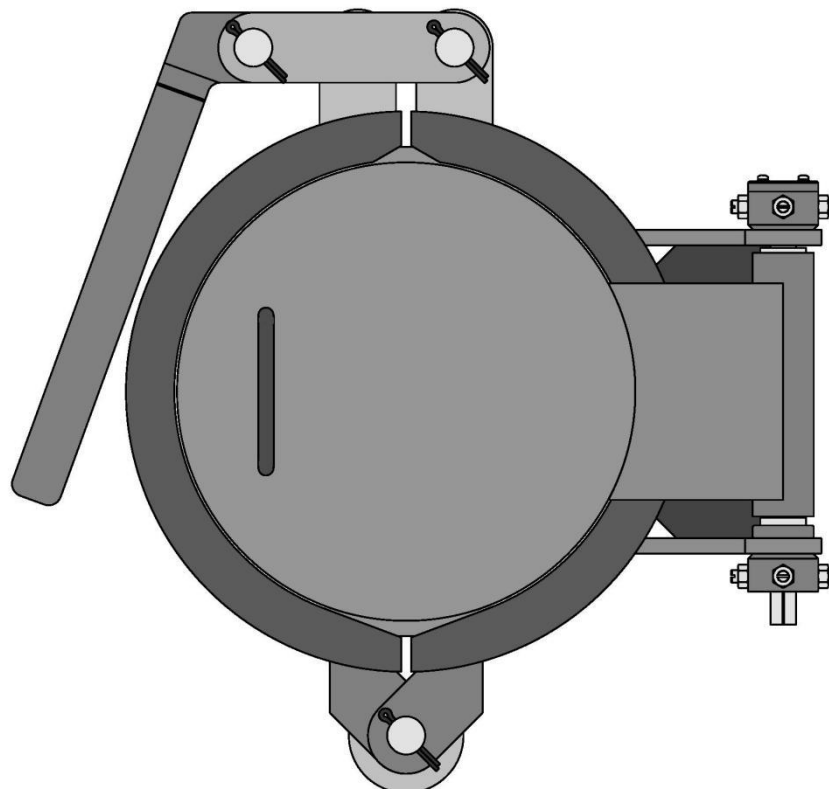


# 扳杠式卡箍型快开盲板（卧式）安装、使用、维护手册

## Articulated type quick opening closure (horizontal) installation, use, maintenance manual

提示：在使用快开盲板之前请认真阅读本手册

Tip: Read this manual carefully before using the quick opening closure



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# 1. 快开盲板介绍 **quick opening closure board introduction**

## 1.1 产品特点 **Product features**

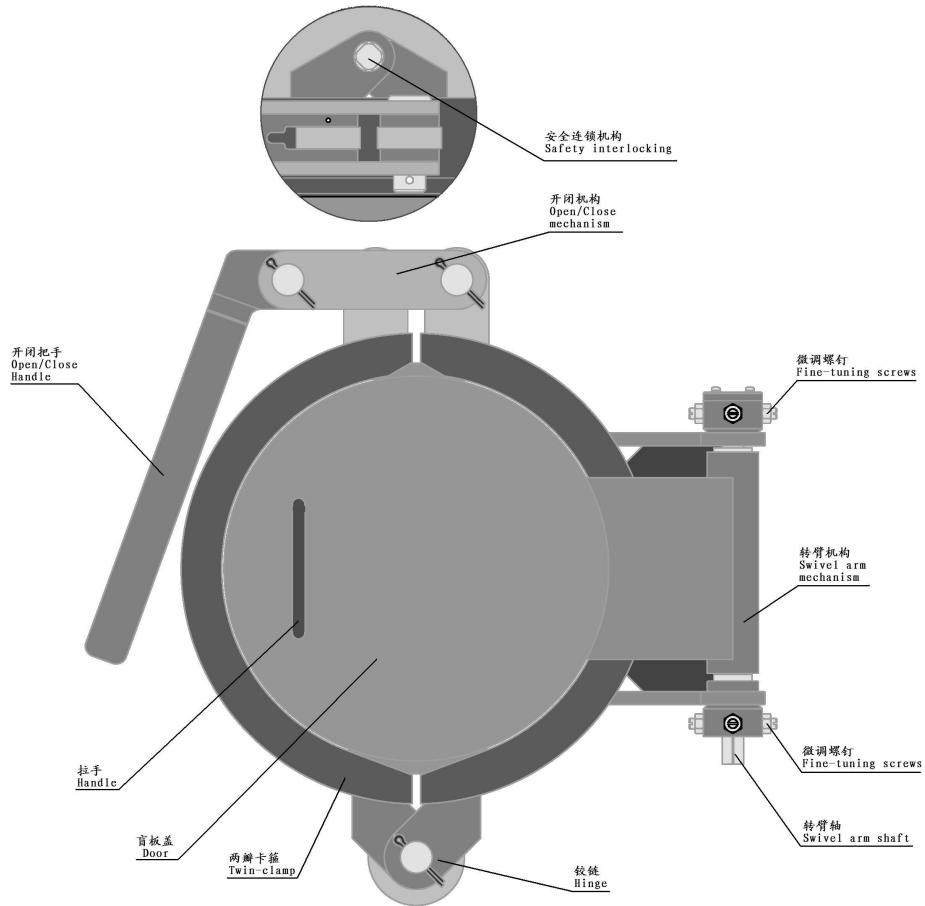
扳杠式卡箍型快开盲板咬合面积大，安全可靠，操作简单，开闭方便，适用于口径不大于 800mm 的设备上安装使用。带有安全联锁机构，充分确保安全可靠。

The Level-Clamp type quick opening closure plate has a large occlusal area, high safety and reliability, simple operation, easy to open/close ,and is more suitable for installation and use on diameter not more than 32" equipment. With safety interlock mechanism to fully ensure safety and reliability.

该产品主要由盲板盖、筒体、两瓣卡箍、安全联锁机构、转臂机构及开闭机构组成。向上或向下扳动开闭把手，两瓣卡箍即可涨开或收缩，从而达到快速开启和关闭的目的。

The product is mainly composed of blind cover, cylinder, Twin-clamp, safety interlock mechanism, swivel arm mechanism and opening and closing mechanism. Turning the Open/Close Handle up or down, the Twin-clamp can be opened or contracted, so as to achieve the purpose of quick opening and closing.

## 1.2 基本结构 **Basic structure**



### 1.3 应用范围 **Scope of application**

该型式快开盲板广泛应用于天然气管线、化工、医药、冶金等各个领域中的如收发球筒、槽罐、增压釜、过滤分离器、换热器等需要不定期开闭的容器设备上。

This type of quick opening closure plate is widely used in natural gas pipelines, chemical industry, medicine, metallurgy and other fields such as transceiver cylinders, tanks, boosters, filter separators, heat ex-changers etc. Irregular opening and closing of containers on the device.

## 2. 安装 **Installation**

### 2.1 初始安装 **Initial installation**

快开盲板初始安装，需符合以下要求：

The initial installation of the quick opening closure must meet the following requirements:

- 1)..... 快开盲板内径应与设备内径一致，焊缝对口间隙应均匀一致，其最大与最小对口间隙之差 $\leq 1.0$

毫米，对口错边量应符合 GB150.4-2011 标准中表 1 或者 ASME VIII div1 中表 UW-33 的规定；

inner diameter of the quick opening closure plate should be consistent with the inner diameter of

the equipment, the weld counterpart gap should be uniform, the difference between the maximum and minimum counterpart gap should be  $\leq 1.0$  mm, and the amount of counterpart misalignment should comply with the provisions of Table 1 in GB150.4-2011 standard or Table UW-33 in ASME VIII div1 standard.

- 2)..... 快开盲板与设备筒体组对之前，应先确定焊接型式：a.如采用双面焊，需拆下盲板盖（具体操作按本手册 2.2 盲板盖的拆卸）；b.如果采用单面焊，只需拿下密封圈即可，无需拆卸盲板盖；

Before quickly opening the blind plate and the equipment cylinder group, the welding type should be determined: a. If double-sided welding is used, the blind cover needs to be removed (the specific operation is according to the disassembly of the blind cover in 2.2 of this manual); b. If single-sided welding is used, only the sealing ring needs to be removed, and there is no need to disassemble the blind cover;

- 3)..... 快开盲板与设备筒体焊接之前，请仔细阅读本手册 2.3 焊接及焊后热处理。Before welding the blind plate and the equipment cylinder, please carefully read this manual 2.3 welding and post-weld heat treatment.

## 2.2 盲板盖的拆卸 **Removal of the blind cover**

在快开盲板组装及维护需要拆卸盲板盖时，请按以下步骤进行：

When the blind cover needs to be removed for quick opening blind assembly and maintenance, please follow the steps below:

- 1)..... 将快开盲板合适放置，按本手册 3.1 开门操作，将盲板盖打开；

Place the quick-opening blind plate suitably, open the door according to 3.1 of this manual, and open the blind cover;

- 2)..... 按图 1 所示，拆下转臂轴上盖，松开微调螺钉，（上下各 4 件，共 8 件），将转臂轴拆下。拆卸过程中应避免转臂轴螺纹部分磕碰损坏；

As shown in Figure 1, remove the upper cover of the arm shaft, loosen the trimming screw, and remove the arm shaft (4 pieces above and below, for a total of 8 pieces). During the

disassembly process, it should be avoided from bumping and damaging the thread part of the arm shaft;

- 3)..... 卸下盲板盖并妥善放置。

the blind cover and place it properly.

### 2.3 焊接及焊后热处理 **Welding and post-weld heat treatment**

由于焊接过程中的焊接应力及焊接操作不当等原因，都可能导致焊接变形的产生，为防止和减小焊接变形，快开盲板与设备筒体组对及焊接时，应遵守以下规定：

Due to the welding stress and improper welding operation in the welding process, etc., may lead to welding deformation, in order to prevent and reduce welding deformation, the quick opening closure plate and equipment barrel group and welding, should comply with the following regulations:

- 1)...对口间隙应均匀一致，最大与最小对口间隙之差 $\leq 1.0$  毫米，对口错边量应符合 GB 150.4-2011 标准中表 1 或者 ASME VIII div1 中表 UW-33 的规定。

The counterpart gap should be uniform and consistent, the difference between the maximum and minimum counterpart gap  $\leq 1.0$  mm, and the amount of counterpart misalignment should comply with the provisions of Table 1 in GB150.4-2011 standard. or Table UW-33 in ASME VIII div1 standard.

- 2)...施焊前，需进行坡口预热或按焊接工艺规定执行；

Before welding, the groove needs to be preheated or implemented according to the welding process regulations;

- 3)...施焊时，应采用小直径焊条、小电流、对称焊、多层焊的焊接方法来控制焊接变形，否则可能导致盲板盖无法开启和关闭，甚至使快开盲板报废；

When welding, the welding method of small diameter electrode, small current, symmetrical welding and multi-layer welding should be used to control the welding deformation, otherwise it may cause the blind cover to be unable to open and close, and even make the quick-opening blind scrapped;

焊后热处理建议：Post-weld heat treatment recommendations:

- 1)..... 对快开盲板与设备筒体之间的环焊缝进行热处理时，应尽量采用局部热处理；

When heat treating the girth weld between the quick-opening blind plate and the equipment cylinder, local heat treatment should be used as much as possible;

2)..... 如果设备制造总图的技术要求中规定设备必须进行整体热处理时，必须用岩棉、硅酸铝或其它保温材料将密封面保护起来，防止过度氧化而影响密封；

If the technical requirements of the equipment manufacturing general drawing stipulate that the equipment must be treated as a whole, the sealing surface must be protected with rock wool, aluminum silicate or other thermal insulation materials to prevent excessive oxidation and affect the seal;

3)..... 热处理工艺严格按 GB150.4 第 8.2 条或 ASME VIII div1 UW-10 标准进行，或按热处理厂家成熟的热处理工艺进行；

The heat treatment process is carried out in strict accordance with Article 8.2 of GB150.4 or ASME VIII div1 UW-10 standards, or according to the mature heat treatment process of heat treatment manufacturers;

4)..... 请注意： a. 如果热处理前头盖已经拆下来，请在热处理之后进行头盖安装； b.如果热处理前头盖未拆卸，请务必将所有密封圈拿下来； c.热处理之后应使用细砂布将密封面轻微擦拭干净，并均匀涂抹润滑脂、甘油或防锈油。

Please note: a. If the head cover has been removed before heat treatment, please install the head cover after heat treatment: b. If the head cover is not removed before heat treatment, be sure to remove all sealing rings; c. After heat treatment, the sealing surface should be slightly wiped clean with a fine emery cloth, and grease, glycerin or anti-rust oil should be evenly applied.

## 2.4 涂敷 **Apply**

快开盲板喷漆之前，必须将安全联锁机构卸下，将所有密封面、内外螺纹、紧固件、焊接坡口、不锈钢零部件、铜质件、电镀处理件等不需要喷漆的部分仔细包覆，以避免影响装配精度、使用性能、外形美观以及防止喷砂和油漆进入。

Before spraying the blind plate, the safety interlock mechanism must be removed, and all sealing surfaces, internal and external threads, fasteners, welding grooves, stainless steel parts, copper parts, electroplating treatment parts and other parts that do not need to be painted must be carefully coated to avoid affecting assembly accuracy, use performance, beautiful appearance and prevent sandblasting and paint from entering.

## 2.5 盲板盖的重装 **Reinstallation of the blind cover**

重新安装头盖时，请按以下要求进行：

**When reinstalling the hood, follow these requirements:**

1)..... 首先对所有密封面进行保护；

First protect all sealing surfaces;

2)..... 拆下密封圈，将盲板盖与筒体对放好，使外径平齐，对齐后，再将盲板盖中心略微上移（由于装配过程中产生的累积公差及盲板盖的自重作用，装配之后，在开启盲板时，盲板盖会产生向下垂直位移。将盲板盖中心略微上移的目的就是为修正此位移）；

Remove the sealing ring, place the blind cover and the cylinder in pairs, make the outer diameter level, align, and then move the center of the blind cover slightly up (due to the accumulated tolerances generated during assembly and the self-weight of the blind cover, after assembly, when the blind is opened, the blind cover will produce downward vertical displacement. The purpose of moving the center of the blind cover slightly up is to correct this displacement);

3)..... 装上转臂轴，拧紧转臂轴上下端的 8 个微调螺钉（紧固微调螺钉时必须避免转臂轴出现任何方向的位移）；

Install the rotating arm shaft and tighten the 8 fine adjustment screws at the upper and lower ends of the arm shaft (when tightening the fine adjustment screws, it is necessary to avoid displacement in any direction of the rotating arm shaft);

4)..... 安装转臂上盖；

Install the upper cover of the swivel arm;

5)..... 进行开门试验，用专用扳手调整转臂轴下端，调整至盲板盖居中。

Carry out the door opening test, adjust the lower end of the swivel arm shaft with a special wrench to adjust to the center of the blind cover.

### **3. 开关门操作 Open and close door operation**

#### **3.1 开门操作 Door opening operation**

注意：严格按以下要求和步骤进行！

Note: Strictly follow the following requirements and steps!



- 1)..... 开门前必须保证设备内压力为零，并严格遵守安全操作规程；  
Before opening the door, it must ensure that the pressure in the equipment is zero and strictly abide by the safety operation procedures;
- 2)..... 拧出安全联锁机构上的安全螺栓，此时，若设备内有残压，应立即停止拧出安全螺栓动作，重新检查设备压力，确认设备内部已完全卸压后（设备上压力表指针回零），方可拧出安全螺栓并卸下安全联锁机构；  
Unscrew out the safety bolt on the safety interlock mechanism, at this time, if there is residual pressure in the equipment, the action of unscrewing the safety bolt should be stopped immediately, the pressure of the equipment should be re-checked, and the pressure inside the equipment has been completely relieved (the pressure gauge pointer on the equipment returns to zero), before the safety bolt can be unscrewed out and the safety interlock mechanism can be removed;
- 3)..... 向上扳动开闭把手，使两瓣卡箍缓慢涨开至最大，达到盲板盖可开启状态，握住拉手打开盲板盖。  
Turning the Open/Close Handle up, so that the Twin-clamp slowly expands and opens to the open state of the blind cover, and holds the handle to open the blind cover.

### 3.2 关门操作 **Door closing operation**

- 1)..... 关门之前应仔细检查密封面、密封槽以及密封圈。密封面应擦拭干净，不允许有一切影响密封的杂物存在。检查密封圈是否有损坏，橡胶是否老化，如有缺陷，必须更换；  
Before closing the door, the sealing surface, sealing groove and sealing ring should be carefully inspected. The sealing surface should be wiped clean, and all debris that affects the seal is not allowed. Check whether the sealing ring is damaged, whether the rubber is aging, and if there is a defect, it must be replaced;
- 2)..... 在密封槽和密封面上均匀涂抹润滑油脂，然后将密封圈装入密封槽内（先装入 12、6 点钟方向，再装入 3、9 点钟方向）；

Apply lubricating grease evenly to the sealing groove and sealing surface, and then load the sealing ring into the sealing groove (first in the direction of 12 and 6 o'clock, then in the direction of 3 and 9 o'clock);

- 3)..... 握住拉手，  
将盲板盖合上，向下扳动开闭把手，使两瓣卡箍收缩，直至密封面完全贴合；

Hold the handle, close the blind cover, Turning the Open/Close Handle down, and shrink the Twin-clamp until the sealing surface is completely fitted;

- 4)..... 装入安全联  
锁机构并缓慢拧紧安全螺栓。

the safety interlock mechanism and slowly tighten the safety bolts.

## 4. 维护保养 **Maintenance**

### 4.1 存放 **deposit**

如快开盲板需要储存，需将密封圈卸下，并将密封面、密封槽彻底清理干净，在表面均匀涂抹防锈油，然后将密封圈重新装入，用塑料布或其它覆盖材料将快开盲板整体包裹好，放入包装箱储存于室内。

If the quick-opening blind needs to be stored, the sealing ring needs to be removed, and the sealing surface and sealing groove are thoroughly cleaned, and the anti-rust oil is evenly applied on the surface, and then the sealing ring is reloaded, and the quick-opening blind plate is wrapped as a whole with plastic cloth or other covering materials, and put into the packaging box for indoor storage.

### 4.2 检查 **examine**

- 1)..... 定期或不定期检查密封圈情况，观察密封圈是否有损坏或橡胶老化，如有缺陷必须更换；

Check the sealing ring regularly or irregularly, observe whether the sealing ring is damaged or rubber aging, and replace it if there is a defect;

- 2)..... 定期或不定期检查安全连锁机构是否完好，安全螺栓是否有断裂，密封圈是否有损坏或老化，如有缺陷必须更换；

Check regularly or irregularly whether the safety interlock mechanism is intact, whether the safety bolt is broken, whether the sealing ring is damaged or aging, and must be replaced if there is a defect;

3)..... 定期或不定期检查快开盲板是否开关灵活、可靠。长期使用后盲板盖因自重可能出现垂直位移，可按本手册 2.5 盲板盖的重装相关方法进行调整。

Check regularly or irregularly whether the quick-opening blind is flexible and reliable. After long-term use, the blind cover may be vertically displaced due to its own weight, and can be adjusted according to the reinstallation method of the blind cover in 2.5 of this manual.

#### 4.3 润滑 lubrication

定期在快开盲板各注油孔加注润滑油以保证快开盲板开关灵活。

Regularly fill the oil injection holes of the quick-opening blind plate with lubricating oil to ensure the flexible opening blind switch.

### 5. 检查和润滑记录附表

#### Inspection and lubrication record schedule

##### 检查记录 Check the records

检查日期 Check the date	密封圈 Sealing rings	安全联锁机构 Safety interlocking mechanism	开、关 On, off	检查人 Check people	备注 Remarks

(实施后请打 ✓ )

(Please hit ✓ after implementation).

##### 润滑记录 Lubrication records

润滑日期 <b>Date of            lubrication</b>	检查人 <b>Check people</b>	备注 remark

(实施后请打 ✓ )

(Please hit ✓ after implementation).

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