

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

安装和维护说明手册



D0578-02-ZH

1/100

Equipment/设备:

S2DA / S2DAT

Type/类型:

CENTER BREAK DISCONNECTOR
中央开断隔离开关

Rated voltage/额定电压:

27.5 kV

Rated current/额定电流:

1250 - 2500 A

Notes/备注:

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1. SAFETY INSTRUCTIONS

安全指引

1.1 SPECIAL SAFETY REQUIREMENTS

特殊安全要求

Special safety requirements are incorporated in this instruction manual and are identified as follows:

本手册含特殊安全要求，并按如下图例标示：

**Danger 危险**

Immediate danger, possible consequences

直接危险，可能招致：

- death or serious injury
死亡或者严重伤害

**Caution 注意**

Dangerous situation, possible consequences

危险情形，可能招致：

- slight or minor injury
细小或轻微伤害，
- the product or something in its vicinity may be damaged
产品或其附近的东西可能遭受损害。

Important 重要

Useful information

有用的信息。

1.2 GENERAL SAFETY REQUIREMENTS

一般安全要求

The operator must make sure

操作者必须确保:

**Danger 危险**

- that the motor drive [operating mechanism] and the linked equipment are installed, commissioned and maintained only by personnel qualified by AREVA or under the direction of a supervisor qualified by AREVA and

马达驱动器（操动机构）和与之连接的设备只能由被 AREVA 认可合格的人员或在被 AREVA 认可合格的人员现场指导下进行安装，调试和维护。

- that during installation, commissioning and maintenance the safety rules specified by the customer and all applicable regulations concerning accident prevention are observed.

安装，调试和维护时，应遵守用户既定的安全准则和所有适用的有关防止事故发生的安全规程。

2. DESCRIPTION

概述

2.1 GENERAL

总论

The AREVA disconnectors of the series S2DA (without earthing switch) and S2DAT (with earthing switch) are of two-insulator type, with central disconnection.

S2DA 系列（无接地开关）和 S2DAT 系列（一个接地开关）AREVA 隔离开关均为双绝缘子，中央断开型。

The main female contacts of these disconnectors are sets of contact blades that are pressed by springs.

这些隔离开关的主要雌触头均为弹簧压紧的触头组。This arrangement ensures adequate pressure when the male contacts penetrate.

这一结构确保雄触头合入时有足够的压紧力。

The contacts couple with a sliding movement and the contact making is self-cleaning and self-tightening; this ensures the best behavior in the case of stress due to short circuit currents.

触头以滑动形式偶合，而且触头的构造具有自洁和自紧功能。这一特点在存在短路电流引起的应力时确保其具有最佳性能。

The support bases are in hot-zinced steel, resistant to the heaviest stress (stress on line terminals, stress due to short-time currents, etc.).

支承底座为热镀锌钢板制造，能承受强应力（接线端子应力，短路电流引起的应力等）。

All elements through which current flows have been standardized and tested with short-circuit current.

所有通流部件皆为标准化产品，并通过短路电流测试。

The equipment is constructed in compliance with the following standards:

本设备按下列标准制造：

- Italy 意大利 CEI EN 62271-102;
- US 美国 ANSI C37 30-37, NEMA SAG 06;
- UK 英国 BS 5253;
- Europe 欧洲 IEC 62271-102.

For better understanding, the examination of the figures of this manual should be always combined with the careful study of the DIN-... installation drawings that concern your specific order.

以下文字可针对数种类型的设备，为更好理解，查阅本手册图例时，应结合仔细研究与你特定定单相应的安装图（图号 DIN-...）。

3. PACKAGING AND SHIPMENT

包装运输

All the items of the equipment are shipped in cases (crates), which must be handled with care in accordance with the standard symbols on the sides of the containers.

所有设备部件均置于木箱或板条箱中发运。必须遵照箱侧的标准标识符号小心装卸。

3.1 TYPES OF PACKAGES

包装类型

Shipment packaging is designed to fully protect the shipping units against mechanical damage and against weather during transportation, unloading and handling on site. It ensures that the product is not damaged and that all quality features, that are guaranteed and tested in all stages of production, remain unaltered.

运输包装的设计对装运单元的机械损伤，以及运输和现场卸货搬运过程中的天气变化提供充分的保护。它保证设备不被毁损，且在制造阶段担保并经过测试的所有质量特性保持不变。

3.1.1 *Shipping cases*

装运包箱

The shipping cases are strong, plywood-covered wooden crates, connected on the sides and reinforced internally with wooden boards. Special-shape wood-pieces are fastened to the bottom of the crates, and if needed to the sides too, in order to hold the content fast; if needed the shaped pieces are lined with foam to damp shocks to the content.

装运包箱为高强度，夹板封盖的木质板条箱，侧面连接，并在里面用木板加强。在板条箱的底部钉上特殊形状的木条（如需要，侧面也钉上木条），以使其能牢固地承受箱内之重物。必要时在型条外包覆多孔塑料，以便对箱内物件起隔振作用。

If needed, the content is wrapped in plastic film or contained in special boxes placed on the bottom of the crate.

必要时，将箱内物件用塑料薄膜包裹，或将其放入特殊盒子后置于箱底。

In order to ensure adequate ventilation, the shipping cases are equipped with weatherproof openings.

为保证足够的通风换气，装运包箱上设有防雨开口。

3.2 SHIPPING UNITS

系统装运单元

The parts that make up the disconnectors are divided in shipping units with the intention to reduce as much as possible the time required for installation on site, while at the same time keeping simple the handling of the shipping units.

将隔离开关部件分成不同的装运单元，目的在于尽可能地缩短现场安装时间，同时简化装运单元的搬运。

4. RECEIPT AND STORAGE

验收和储存

4.1 RECEIPT

验收

As soon as you receive the crates, inspect the content of each package and make sure that nothing is damaged and that all the items written in the packing list are there.

收到板条箱后，立即检查各个包装内的物件，确保无物件毁损，且装箱单上所列全部物品无缺漏。

Damaged items or discrepancies between content and packing list must be reported to AREVA immediately.

如有物件毁损或实物与装箱单不符，必须立即通知 AREVA 公司。

If after the inspection the cases should be relocated or stored for a long time, restore them to the original conditions.

若在验货后还需转运或长期储存，则须将包装箱恢复至原始包装状态。

When handling or unloading the cases, take care not to damage the equipment.

搬运和装卸包装箱时，注意不要损伤设备。

4.2 STORAGE

储存

4.2.1 Short-time storage (less than three months)

短期储存（3个月以内）

Place the packages in a dry and sheltered location, or if in the open-air, make sure the area is drained well.

将包装置于干燥，有遮蔽的场所。如果是在户外，确保所处位置排水良好。

In case of outdoor storage, the place should be dry and ventilated and the crates should be raised at least 10 cm from the ground with wooden beams.

户外储存时，应保持干燥且通风良好。板条箱要用木条垫起，离地面至少 10 cm。

If the storage is expected to last no longer than three months, the anti-condensation heaters contained in the drive need not be energized.

如果储存时间不超过 3 个月，操动机构内的防凝水加热器不必通电。

4.2.2 Long-time storage (longer than three months)

长期储存（3个月以上）

In this case:

在这种情况下：

- If the equipment is stored indoors, and the warehouse is dry, the drives shall be inspected every six months to make sure that no oxidation occurs due to moisture inside the drives;

如果设备在室内储存，且仓库内干燥，则操动机构每 6 个月要进行一次检查，以确保其未因内部受潮而产生氧化现象。

- If the equipment is stored outdoors or in a moist (damp) warehouse, follow the recommendations of paragraph 4.2.1 and also connect the anti-condensation heaters of the drive to a power supply and keep them energized.

如果设备在户外或在潮湿的仓库中存放，请按 4.2.1 节推荐的方案处理，并保持操动机构内的防凝加热器的电源接通。

5. UNPACKING AND LIFTING

开箱与吊运

Unpack the materials with care in order to avoid loosing or damaging any items.

小心地打开包装，避免丢失或毁损物件。

Handle the complete units taking care especially of porcelain insulators even if already assembled.

搬运各单元时，要特别小心，尤其是陶瓷绝缘子，即使组装好了亦应如此。

Open the shipping cases on site just before installation, in a position where the hoisting equipment may hook the materials with ease.

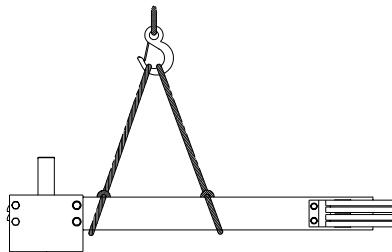
请在安装前于安装现场开箱，开箱位置应确保吊装设备可以方便地进行起吊。

Sling the material with an adequate lifting apparatus as shown in figure A.

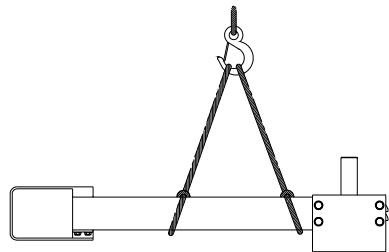
按图 A 所示，以适当的器具用绳索将物件吊起。

FIG.A: LIFTING THE UNITS OF THE DISCONNECTOR

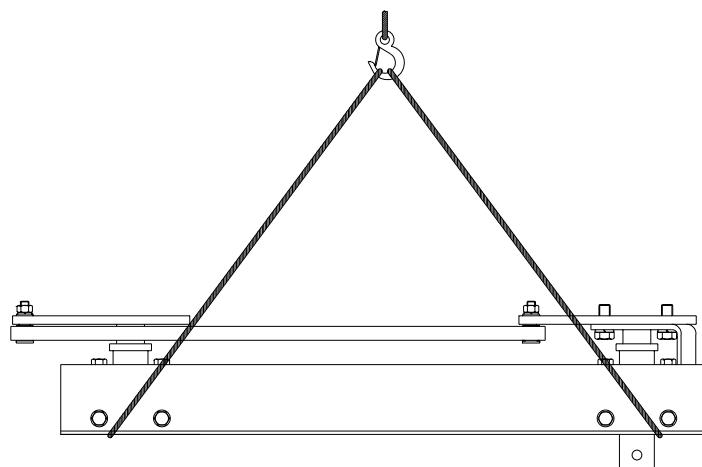
图A:隔离开关各部件的吊运



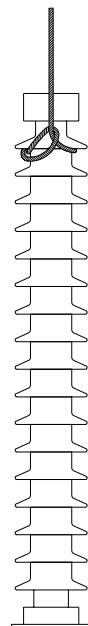
GRUPPO PARTE ATTIVA - BRACCIO FEMMINA
MOBILE LIVE PART - FEMALE SEMI-ARM



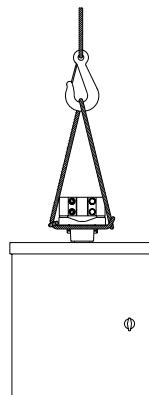
GRUPPO PARTE ATTIVA - BRACCIO MASCHIO
MOBILE LIVE PART - MALE SEMI-ARM



GRUPPO PARTE INFERIORE
LOWER PART



ISOLATORE
INSULATOR



DISPOSITIVO DI MANOVRA
OPERATING MECHANISM

MOBILE LIVE PART=动通流部件

FEMALE SEMI-ARM = 雌半刀臂

MALE SEMI-ARM = 雄半刀臂

LOWER PART=底部

INSULATOR =绝缘子

OPERATING MECHANISM (DRIVE) = 操动机构(驱动机构)

6. INSTALLATION AND ADJUSTMENT

安装和调整

6.1 CONDITIONS AND PRELIMINARY OPERATIONS BEFORE INSTALLATION

安装前的情况和预备性操作

- a) To install correctly the switchgears, the connection dimensions of building works and steel works must comply with the specific installation drawings DIN -... of your order.

要正确安装此开关设备，基础和钢支架的连接尺寸必须与你所订购的设备的专用安装图 DIN...上给出的参数相符。

- b) In addition, consult the specific instructions manuals of the drive [operating mechanisms] D-... of your order.

此外，参阅你所订购的设备的操作机构专用使用手册。

- c) Screws, bolts and nuts must be tightened with a torque wrench with the torque values in the tables of Attachment "B".

螺钉，螺栓和螺母必须使用力矩扳手按照附表 B 所给出的力矩数值进行紧固。

- d) Prepare and treat the permanent contact surfaces of live parts, through which current will flow (e.g. the contact surface between the terminal connection pad or shank and the clamp of the line conductor) as follows:

按如下所述，对通流部件永久性接触表面进行准备和处理，因为电流将从这些表面流过（如接线端子垫板或接线柱与导线卡箍之间的接触面）：

- wipe off any trace of grease from the contact surfaces with trichloroethylene or other non-abrasive solvent. If the surfaces are oxidized, clean them up with a steel brush or fine emery paper;

用三氯乙烯或其他无磨蚀性溶剂抹去接触表面上的任何油脂痕迹，若表面氧化，则用不锈钢钢丝刷或细砂纸清除干净。

- cover immediately with antioxidant compound;
立即用抗氧化剂涂覆；

- connect the surfaces as soon as possible;
尽快进行连接。

- e) For the disconnectors of type S2DA, install the units in the following sequence:

对于 S2DA 型隔离开关，按下列顺序安装各单元：

- support structure;
支架结构；

- Lower bases;
下底座；

- Insulators;
绝缘子；

- live parts: arms with female contacts;
通流部分：带雌触头的刀臂；

- live parts: arms with male contacts;
通流部分：带雄触头的刀臂；
- vertical drive shaft of the disconnector;
隔离开关的垂直驱动轴；
- drive of the disconnector.
隔离开关操动机构.

Moreover, if the disconnector is equipped with an earthing switch (disconnector of type S2DAT), proceed as follows:

另外，如果隔离开关上装有接地开关(S2DAT 型隔离开关)，则应按以下步骤操作：

- vertical drive shaft of the earthing switch;
接地开关的垂直驱动轴；
- drive of the earthing switch.
隔离开关操动机构.

In order to protect them, the areas marked with ●(Fig. 10) are lubricated with neutral Vaseline before shipping.
为保护起见，装运前在图 10 中标有●处涂有中性凡士林。

Important 重要

Before carrying out the installation, clean carefully the surfaces with a dry cloth and then apply the grease indicated in figure 10 with a brush (the quantity required for the first greasing is included in the supply).

安装前，用干布小心清除，然后用刷子按图 10 加润滑脂（
货物已包含第一次加脂所需要的润滑脂）。

6.2 INSTALLATION OF THE SUPPORT STRUCTURES ON PILLARS

在柱子上安装支架结构

6.2.1 Support structures on rectangular-section reinforced-concrete pillars (Fig. 4, 4A, 4B)

在矩形部分的钢筋混凝土柱子上的支架结构（图 4, 4A, 4B）

Concerning the correct layout of the support structures of the disconnector and of the drive, see Fig. 4A and 4B of this manual and the specific DIN-... installation drawings.
关于隔离开关支架结构的正确布局，可见本手册的图 4A 和
4B 以及具体的 DIN-…安装图纸。

Important 重要

Concerning the installation of the intermediate guide, if required, for the vertical drive shafts, see the following paragraphs 6.3.5 and 6.4.7.

关于需要为垂直驱动轴安装中间导轨的内容，可见以下第
6.3.5 和 6.4.7.段。

While the support structure (4.0 Fig. 4) is on the ground, install on its sides the fastening angle-bars (4.13 Fig. 4A, 4B) using the specific threaded bars (4.11 Fig. 4A, 4B) with nuts, plain and split washers.

当支架结构（图 4 之 4.0）位于地面时，使用带有螺母，平垫圈和开口垫圈的专门牙条（图 4A, 4B 之 4.11）在其侧面安装紧固角钢（图 4A, 4B 之 4.13）。

Fasten the two support brackets (4.10 Fig. 4A, 4B) to the lower part of the structure (4.0 Fig. 4A, 4B) using the respective bolts (4.14 Fig. 4A, 4B).

使用相应的螺栓（图 4A, 4B 之 4.14）把两个支架托架（图 4A, 4B 之 4.10）紧固到支架结构的下部（图 4A, 4B 之 4.0）。

Lift then the support structure (4.0 Fig. 4A, 4B), lay it on the head of the pillar and fasten it temporarily in its position with the specific threaded bars (4.12 Fig. 4A, 4B) including nuts, plain and split washers.

提升支架结构（图 4A, 4B 之 4.0），把它放在支柱的顶端并且用包括螺母，平垫圈和开口垫圈的专门牙条（图 4A, 4B 之 4.12）把它临时固定在其位置上。

Release the lifting apparatus.

拆除吊装绳索等。

Check that the structure (4.0 Fig. 4A, 4B) is horizontal and positioned at the height indicated in the specific DIN-... installation drawing.

检查该结构（图 4A, 4B 之 4.0）是否水平而且定位于具体的 DIN…安装图纸内所表示的高度。

Tighten finally the nuts of the fastening threaded bars (4.12 Fig. 4A, 4B).

最后拧紧紧固牙条（图 4A, 4B 之 4.12）上的螺母。

Install temporarily the bracket (4.22 Fig. 4A) that supports the drive on the pillar using the specific fastening bracket (4.23 Fig. 4A) and the respective threaded bars (4.24 Fig. 4A) including nuts, plain and spring washers.

使用专门的紧固托架（图 4A 之 4.23）和包括螺母，平垫圈和开口垫圈的相应牙条（图 4A 之 4.24）临时安装在支柱上支撑操作机构的托架（图 4A 之 4.22）。

For the installation of the disconnector of type S2DAT, use the other support bracket (4.22 Fig. 4B) instead of the fastening bracket (4.23 Fig. 4A).

为了安装 S2DAT 型隔离开关，应使用其他的支持托架（图 4B 之 4.22）而不使用紧固托架（图 4A 之 4.23）。

Check that the bracket (4.22 Fig. 4A, 4B) that supports the drive is aligned with the above-located structure (4.0 Fig. 4A, 4B) that supports the drive and that the dimensions are in accordance with those indicated in the specific DIN-... installation drawing.

检查支持操作机构的托架（图 4A, 4B 之 4.22）是否对准以上已经就位的结构（图 4A, 4B 之 4.0），该结构用于支持操作机构而其尺寸应和具体的 DIN…安装图纸所示一致。

Tighten finally the nuts of the fastening threaded bars (4.24 Fig. 4A, 4B).

最后拧紧紧固牙条（图 4A, 4B 之 4.24）上的螺母。

6.2.2 **Support structures on round-section reinforced-concrete pillars (Fig. 4, 4C, 4D)**

在圆形部分的钢筋混凝土柱子上的支架结构（图 4, 4C, 4D）

Concerning the correct layout of the support structures of the disconnector and of the drive, see Fig. 4C and 4D of this manual and the specific DIN-... installation drawings.

关于隔离开关支架结构的正确布局，可见本手册的图 4C 和 4D 以及具体的 DIN-… 安装图纸。

Important 重要

Concerning the installation of the intermediate guide, if required, for the vertical drive shafts, see the following paragraphs 6.3.5 and 6.4.7.

关于需要为垂直驱动轴安装中间导轨的内容，可见以下第 6.3.5 和 6.4.7 段。

While the support structure (4.0 Fig. 4) is on the ground, install on its sides the four support brackets (4.10 Fig. 4A, 4B) using the specific threaded bars (4.11 Fig. 4C, 4D) with nuts, plain and split washers.

当支架结构（图 4 之 4.0）位于地面时，使用带有螺母，平垫圈和开口垫圈的专门牙条（图 4C, 4D 之 4.11）在其侧面安装四个托架（图 4A, 4B 之 4.10）。

Lift then the support structure (4.0 Fig. 4C, 4D), lay it on the head of the pillar and fasten it temporarily in its position with the specific threaded bars (4.9, 4.12 Fig. 4C, 4D) including nuts, plain and split washers.

提升支架结构（图 4C,4D 之 4.0），把它放在支柱的顶端并且用包括螺母，平垫圈和开口垫圈的专门牙条（图 4C, 4D 之 4.9 和 4.12）把它临时固定在其位置上。

Release the lifting apparatus.

拆除吊装绳索等。

Check that the structure (4.0 Fig. 4C, 4D) is horizontal and positioned at the height indicated in the specific DIN-... installation drawing.

检查该结构（图 4C,4D 之 4.0）是否水平而且定位于具体的 DIN-… 安装图纸内所表示的高度。

Tighten finally the nuts of the fastening threaded bars (4.9, 4.12 Fig. 4C, 4D).

最后拧紧紧固牙条（图 4C,4D 之 4.9 和 4.12）上的螺母。

Install temporarily the bracket (4.22 Fig. 4C) that supports the drive on the pillar, using the special U-shaped threaded bars (4.26 Fig. 4C), with nuts, plain and spring washers.

使用包括螺母，平垫圈和弹簧垫圈的专门的 U 型牙条（图 4C 之 4.26）临时安装在支柱上支撑操作机构的托架（图 4C 之 4.22）。For the installation of the disconnector of type S2DAT, use the other support bracket (4.22 Fig. 4D) and the specific threaded bars (4.24 Fig. 4D) with nuts, plain and spring washers.

为了安装 S2DAT 型隔离开关，应使用其他的支持托架（图 4D 之 4.22）和带有螺母，平垫圈和弹簧垫圈的专门牙条（图 4D 之 4.24）。

Check that the bracket (4.22 Fig. 4C, 4D) that supports the drive is aligned with the above-located structure (4.0 Fig. 4C, 4D) of the disconnector and that the dimensions are in accordance with those indicated in the specific DIN-... installation drawing.

检查支持操作机构的托架（图 4C, 4D 之 4.22）是否对准以上已经就位的隔离开关的支架结构（图 4C, 4D 之 4.0），而其尺寸应和具体的 DIN-… 安装图纸所示一致。

Tighten finally the nuts of the fastening threaded bars (4.24 or 4.26 Fig. 4C, 4D).

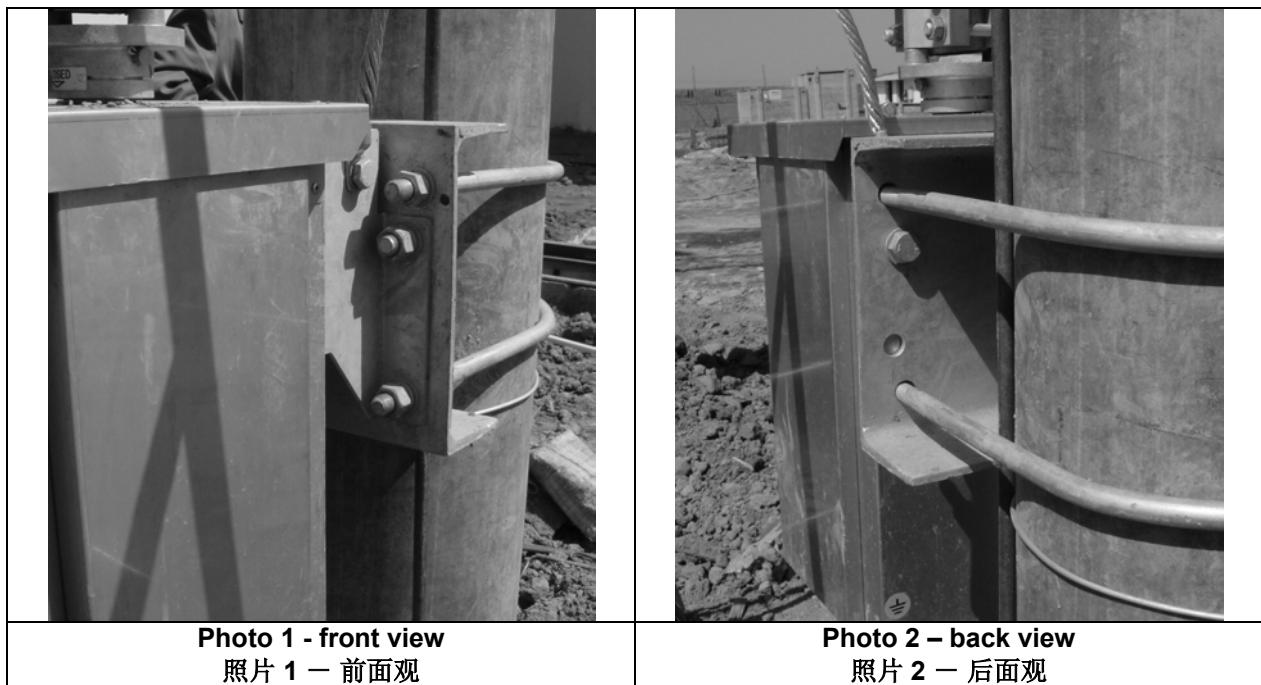
最后拧紧紧固牙条（图 4C,4D 之 4.24 或 4.26）上的螺母。

Note for installation on round-section pillars with diameter of 300 mm

在直径为 300mm 的圆形截面柱子上进行安装的说明

In this case the bracket (4.22 Fig. 4C) that supports the drive is installed in a way slightly different than that of the procedure described previously for round-section pillars with larger diameters.

在此情况下，支持操作机构托架 (图 4C 之 4.22) 的安装和先前描述过在具有较大直径圆形截面的柱子上进行安装时的步骤稍有不同。



Install temporarily the bracket (4.22 Fig. 4C) that supports the drive on the pillar by means of one of the two U-shaped threaded bars (4.26 Fig. 4C), with nuts, plain and spring washers on the upper holes of the bracket.

用带有螺母、平垫圈和弹簧垫圈的两个 U 型牙条 (图 4C 之 4.26) 中的一个把在柱子上支持操作机构的托架 (图 4C 之 4.22) 临时安装托架的上方孔内。

Lift the drive as shown in figure A; take the back of the device toward the support bracket (4.22 Fig. 4C) and take care that the holes on the drive (7.11 Fig. 7) match the holes on the bracket. Fasten temporarily two bolts diagonally; do not tighten them.

如图 A 所示提升操作机构；把装置的背面朝着支持托架(图 4C 之 4.22)并小心使操作机构上的孔 (图 7 之 7.11) 对准托架上的孔。临时固定两个对角线方向上的螺栓；但不要拧紧。

Release the lifting apparatus.

松开提升装置。

Install the other U-shaped threaded bars (4.26 Fig. 4C), including nuts, plain and spring washers, on the lower holes of the bracket (4.22 Fig. 4C); these holes are spaced 300 mm and match the lower holes (7.11 Fig. 7) of the drive, therefore the two

ends of the bar (4.26 Fig. 4C) must be bent slightly inwards in order to fit them in.

把其他 U 型牙条 (图 4C 之 4.26)，包括螺母、平垫圈和弹簧垫圈安装到托架(图 4C 之 4.22)的下方孔上；这些孔间隔 300 mm 的距离并且和操作机构下方的孔 (图 7 之 7.11) 相匹配，因此牙条 (图 4C 之 4.26) 的两段一定要被稍微向内弯曲以便把它们装入。

Check that the bracket that supports the drive is aligned with the above-located support structure of the disconnector and that the dimensions are in accordance with those indicated in the specific DIN-... installation drawing.

检查支持操作机构的托架是否对准上述定位的隔离开关的支架结构而且尺寸和具体的 DIN-... 安装图纸内所规定的相符。

Check also that the drive is horizontal in two perpendicular directions, if needed shim the fastening devices.

同时检查操作机构应当在两个垂直方向上保持水平，如果需要就在紧固装置内增加垫片。

As soon as the correct position of the drive is reached, tighten finally the fastening bolts and the nuts of the U-shaped threaded bars. The pictures 1 and 2 illustrate the final condition.

只要操作机构一达到正确位置，就最后拧紧 U 型牙条的紧固螺栓和螺母。图 1 和图 2 表明了最后的状态。

For the installation of the disconnector of type S2DAT, use the other support bracket (4.22 Fig. 4D) and the specific threaded bars (4.24 fig. 4D) with nuts, plain and spring washers and proceed in the same way.

为了安装 S2DAT 型的隔离开关，可使用其他的支持托架(图 4D 之 4.22)以及带有螺母、平垫圈和弹簧垫圈的专门牙条 (图 4C 之 4.24) 并以相同的方式操作。

6.3 INSTALLATION OF THE SINGLE-POLE S2DA DISCONNECTOR

单极 S2DA 隔离开关的安装

6.3.1 Lower base (Fig. 1, 5)

下底座 (图 1,5)

Lift, as shown in figure A, the lower base (5.0 Fig. 5) and, after checking that its position is correct, in agreement with the specific DIN-... installation drawing, lay it down on the installed support structure (4.0 Fig. 1), with the fastening holes aligned.

如图 A 所示提升下底座 (图 5 之 5.0) 并且在查明其位置正确，符合具体的 DIN… 安装图纸以后，把它向下放在已安装好的支架结构 (图 1 之 4.0) 上，对准紧固孔。

Fasten temporarily the lower base to the support structure.

把下底座临时固定在支架结构上。

Release the lifting apparatus.

拆除吊装绳索等。

With the spirit level, check that all the rotary discs (5.11 and 5.12 Fig. 5) that support the rotary insulators (1.1 Fig. 1) are horizontal in the two perpendicular directions.

用水平仪检查支承旋转绝缘子（图 1 之 1.1）的所有旋转盘（图 5 之 5.11 和 5.12），要求这些表面在互相垂直的两个方向都是水平的。

If needed shim with the C-washers on the bolts, between the support structure and the brackets of the bases, until the bases are adequately level.

必要时，可在螺栓上，底座的支承结构和支架间，借助 C 形垫片适当地为底座找平。

Before fastening finally the base to the structure, check also that:

将底座最终固定于支架前，还要检查：

- the base is aligned with the support structure;
底座和支架结构对准；
- the base is level;
底座保持水平；
- during final fastening no deformation has taken place altering the adjustments already carried out.
最终紧固时，是否发生变形，从而改变了已取得的调整结果。

If needed repeat the operations above.

必要时，重复上述调整。

6.3.2 ***Rotary insulators (Fig. 1, 2D, 5)***

旋转绝缘子（图 1, 2D, 5）

Turn the rotary discs (5.11 and 5.12 Fig. 5) by hand and set the disconnector to the CLOSED position as shown in figure 5.

用手转动旋转盘（图 5 之 5.11 和 5.12）并按图 5 所示将隔离开关置于合闸位置。

Remove the stop plate (5.14 Fig. 5) installed on the rotary disc (5.11 Fig. 5) of the side of the female arm; take notice of its positions and mark it.

取下安装在雌刀臂一侧转动盘（图 5 之 5.11）上的限位板（图 5 之 5.14）；注意其位置并做上记号。

Lift the insulators (1.1 Fig. 1) as shown in figure A and lay them down slowly onto the rotary discs.

如图 A 所示提起绝缘子（图 1 之 1.1）并把它缓慢地向下放到转动盘上。The position of each insulator is correct when the holes of the upper flange are at 45° in relation to the longitudinal axis of the base (Fig. 2D).

当上法兰上的孔相对于底座（图 2D）纵轴成 45° 时，各绝缘子的位置就是正确的。

Install again on the rotary disc (5.11 Fig. 5) of the side of the female arm the stop plate (5.14 Fig. 5) previously removed without fastening it finally.

重新装上先前取下的，雌刀臂一侧转动盘（图 5 之 5.11）上的限位板（图 5 之 5.14），并不要完全拧紧。

Fasten the stop plate together with the insulator with the specific screws as shown in figure 2D.

如图 2D 所示，使用专门的螺钉把限位板和绝缘子固定在一起。

Complete the fastening of the insulators with the remaining bolts.

用余下的螺栓完成绝缘子的固定。

With the spirit level, laid on the upper flange of each insulator, check that the flange is level in the two perpendicular directions as shown in figure 2D.

在每个绝缘子的上法兰上用水平仪检查法兰是否如图 2D 所示在两个垂直方向上水平。

Turn the rotary discs (5.12 and 5.11 Fig. 5) by hand and set them to the OPEN positions.

用手转动转动盘（图 5 之 5.12 和 5.11）并把它们置于开闸位置。

With the spirit level, check again that the upper flange of each insulator is level.
用水平仪再次检查每个绝缘子的上环缘是否水平。

Check also that the rotary insulator (1.1 Fig. 1) rotates around its axis without describing a cone (Fig. 2D). If needed insert the C-washers (Fig. 2D) between the flange and the rotary disc, until the system reaches the required conditions. When you have achieved the required conditions, tighten the fastening bolts. Take into account that any C-washers should be inserted on the bolts as shown in figure 2D so that slanted supporting planes are created for the flanges of the insulator, in order to avoid stressing the flanges.

同时检查旋转绝缘子（图 1 之 1.1）能绕其轴转动绕其轴自由转动而不发生摩擦（图 2D）运行。如有必要，在环缘和旋转盘之间插入专用 C 型垫圈（图 2D），直至系统达到所需状态。当你获得所需状态以后拧紧紧固螺栓。注意任一个 C 型垫圈都必须按图 2D 所示方式插入，从而为螺栓形成一个倾斜的支承表面，来防止压力作用到绝缘子环缘上。

Finally check that the distances between the centers of the insulators are as indicated in the installation drawing DIN-...

最后检查各绝缘子轴线间的距离，确保这些尺寸与安装图 DIN-…所示相同。

6.3.3 **Mobile live part (Fig. 1, 2, 2A, 2B)**

动过流部件 (图 1, 2, 2A, 2B)

The figures 2, 2A and 2B show the live parts for rated currents of 1250, 1600-2000 and 2500 A respectively.

图 2, 2A, 和 2B 所示为额定电流分别为 1250, 1600-2000 和 2500A 的通流部件。

Important 重要

The following installation procedure applies to all types of live parts.

以下所述的安装程序适用于所有三种通流部件。

The contacts (2.3 and 2.5 Fig. 2, 2.12 and 2.14 Fig. 2A, 2.22 and 2.24 Fig. 2B) are protected with neutral Vaseline before shipment.

装运以前，触头（图 2 之 2.3 和 2.5, 图 2A 之 2.12 和 2.14, 图 2B 之 2.22 和 2.24）被中性凡士林保护层盖上。Before carrying out the installation, clean carefully the surfaces with a dry cloth and then apply the grease indicated in Fig. 10 with a brush (the quantity required for the first greasing is included in the supply).

安装前，用干布小心清除，然后用刷子按图 10 加润滑脂（货物已包含第一次加脂所需要的润滑脂）。

Important 重要

The two arms, the male arm (2.2 Fig. 2, 2.11 Fig. 2A, 2.21 Fig. 2B) and the female arm (2.1 Fig. 2, 2.10 Fig. 2A, 2.20 Fig. 2B), that make up the live part of the disconnector are not symmetrical.

组成隔离开关通流部分的两个刀臂，雄的（图 2 之 2.2, 图 2A 之 2.11, 图 2B 之 2.21）和雌的（图 2 之 2.1, 图 2A 之 2.10, 图 2B 之 2.20），并不是对称的。


Caution 注意

If the arms are swapped, the disconnector does not work and any operation may damage the live parts.

如果两个刀臂装反了的话，隔离开关将不能工作，并且任何操作都有可能损害通流部分。Each arm must therefore be installed in the respective rotary insulator.

因此，每一个刀臂都必须安装在相应的转动绝缘子上。

With the poles of the disconnector in the OPEN position, lift the arms as shown in figure A and install them on the respective insulators and - with the screws, nuts, plain and spring washers - fasten them to the flanges of the rotary insulators.

使隔离开关的相处于分闸状态，如图 A 所示起吊刀臂并将它们安装到相应的绝缘子上，然后使用螺钉，螺母，平垫圈和弹簧垫圈将它们固定到旋转绝缘子的环缘上。

With a manual operation set the disconnector to the CLOSED position.

进行一次手动操作将隔离开关置于合闸位置。

6.3.4 Line terminal clamps (Fig. 2C)

端子连接夹（图 2C）

This paragraph contains the instructions for installing or replacing the clamps (2.50 Fig. 2C) of the line terminals.

本段内含有安装或更换电线端子连接夹（图 2C 之 2.50）的说明。

Important 重要

Before installing the clamps, clean and prepare the contact surfaces on the shanks and inside the clamps in accordance with the procedure described in paragraph 6.2.

在安装连接夹之前，请按照 6.2 段内说明的程序清洁并准备好连接头以及连接夹内部的触头表面。

When the poles of the disconnector are in CLOSED position and the terminals are disconnected, the flexible conductors (2.52 Fig. 2A) tend to unwind and turn the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B), which moves it away from the correct position.

当隔离开关的电极处于合闸状态而且端子断开的情况下，可弯曲的导线（图 2A 之 2.52）倾向于展开并推向连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27），并使其从正确的位置向外移动。

Therefore, before installing the clamps (2.50 Fig. 2A) of the line terminals, align suitably the shanks (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) with the live parts.

因此，在安装接线端的连接夹（图 2A 之 2.50）之前，请把连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）适当地对准带电部件。

To this purpose, grasp the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) with your hands and turn it in the correct direction (counterclockwise for the female arm and clockwise for the male arm) until it strikes the respective closing end stop (see Fig. 2C); in this position the flexible conductors (2.52 Fig. 2A) are completely wound.

为此，要用手抓住连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）并把它转向正确的方向（雌刀臂为逆时针方向而雄刀臂为顺时针方向（直至其触及各自的合闸端头挡板（见图 2C）；在这一位置，可弯曲的导线（图 2A 之 2.52）就被完全弯曲了。

Insert then a screwdriver, or other suitable tool, into the hole "F" of Fig. 2C to hold the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) fixed when installing the clamp (2.50 Fig. 2A).

然后用一把螺丝刀，或其他合适的工具插入图 2C 内的孔 “F”以便在安装连接夹（图 2A 之 2.50）时使连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）保持不动。

Finally insert the clamp (2.50 Fig. 2A) on the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) and align it with the longitudinal axis of the live part; tighten then the fastening screws (2.51 Fig. 2A) with the required torque.

最后插入连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）上的连接夹（图 2A 之 2.50）并把它对准带电部件的纵轴；用所需的扭矩拧紧固定螺钉（图 2A 之 2.51）。

6.3.5 **Intermediate guide and upper section of the vertical drive shaft (Fig. 1, 4A, 4C, 7A)**

中间导轨和垂直驱动轴的上半部分（图 1, 4A, 4C, 7A）

The vertical drive shaft of the disconnector may be shipped in two sections (7.7.1 and 7.7.2 Fig. 1) according to the height of the support pillars.

根据其支持柱子的高度，隔离开关的垂直驱动轴可能被分成两部分（图 1 之 7.7.1 和 7.7.2）发运。

Important 重要

In this case, a special intermediate support guide must be installed on the support pillar.

在此情况下，在支持柱子上必须安装一个特别的中间支持导轨。

Insert the top of the first section (7.7.1 Fig. 7A) of the vertical drive shaft into the hub (5.15 Fig. 5) of the rotary disc (5.11 Fig. 5) on the side of the female arm and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

把垂直驱动轴第一部分（图 7A 之 7.7.1）的顶端插入雌刀臂一侧转动盘（图 5 之 5.11

) 的轮毂 (图 5 之 5.15) 并用专门的销钉和开口销 (图 7 之 7.13) 将其锁定于其最终的位置上。

Insert the connection hub (7.19 Fig. 7A) including guide plate (4.17 Fig. 7A) and lock ring (7.20 Fig. 7A), into the bottom of the first section (7.7.1 Fig. 7A) of the vertical drive shaft and fasten it with the specific pin and cotter pins (7.17 Fig. 7A).

把包括引导板 (图 7A 之 4.17) 和锁定环 (图 7A 之 7.20) 在内的连接轮毂 (图 7A 之 7.19) 插入垂直驱动轴第一部分 (图 7A 之 7.7.1) 的底部并且用专门的销钉和开口销 (图 7A 之 7.17) 将其锁定于最终位置上。

With reference to the Fig. 4A and 4C, position the bracket (4.15 Fig. 4A, 4C), inclusive of its support (4.16 Fig. 4A, 4C) at the height of the guide plate (4.17 Fig. 7A).

参阅图 4A 和 4C, 把托架 (图 4A, 4C 之 4.15), 包括其支架 (图 4A, 4C 之 4.16) 放置在引导板 (图 7A 之 4.17) 的高度。

Fasten temporarily the bracket (4.15 Fig. 4A, 4C) to the support pillar using the other bracket (4.15 Fig. 4A, 4C) and the respective threaded bars (4.21 Fig. 4A, 4C), with nuts and spring washers.

用其他托架 (图 4A, 4C 之 4.15) 和带有螺帽和弹簧垫圈的相应牙条 (图 4A, 4C 之 4.21) 把托架 (图 4A, 4C 之 4.15) 临时固定在支架柱子上。

Fasten temporarily the guide plate (4.17 Fig. 7A) to the support (4.16 Fig. 7A) with the respective bolts (4.19 Fig. 7A).

用相应的螺栓 (图 7A 之 4.19) 把导板 (图 7A 之 4.17) 临时紧固到支架 (图 7A 之 4.16) 上。

Check that the upper section (7.7.1 Fig. 7A) of the drive shaft is vertical in the two perpendicular directions and that the guide plate (4.17 Fig. 4A, 4C) is horizontal and aligned with the centerline of the lower base.

检查驱动轴的上半部分 (图 7A 之 7.7.1) 是否在两个竖直方向上垂直而且导板 (图 4A, 4C 之 4.17) 是否水平并对准下底座的中心线。

Check also that the upper section (7.7.1 Fig. 7A) of the vertical drive shaft can turn freely and without friction.

同时检查垂直驱动轴的上半部分 (图 7A 之 7.7.1) 能够自由而无阻力地转动。

Fasten finally the brackets (4.15 Fig. 4A, 4C) to the pillar tightening the nuts of the threaded bars (4.21 Fig. 4A, 4C) and tighten the bolts (4.19 Fig. 7A) that fasten the guide plate (4.17 Fig. 7A).

最后将托架 (图 4A, 4C 之 4.15) 紧固到柱子上, 紧固牙条 (图 4A, 4C 之 4.21) 上的螺帽并扣紧用于紧固导板 (图 7A 之 4.17) 的螺栓 (图 7A 之 4.19)。

6.3.6 Lower section of the vertical drive shaft and drive (Fig. 7, 7A)

垂直驱动轴的下半部分和操作机构 (图 7, 7A)

Important 重要

Before carrying out the installation, check that the serial number of the drive is the same as the serial number of the switchgear.

进行安装前, 确保驱动机构的系列号与开关设备的系列号相同。

Lift the drive as shown in figure A; take the back of the device toward the support structure (4.0.2 Fig. 1) and take care that the holes on the drive (7.11 Fig. 7) match the holes on the structure.

按图 A 所示吊起操作机构；使该装置的背部朝向支架结构（图 1 之 4.0.2）并且注意使操作机构（图 7 之 7.11）上的孔和支架结构上的孔相匹配。Fasten temporarily two bolts diagonally; do not tighten them.

暂时拧上两个对角线方向上的螺栓；但不要拧紧。

Release the lifting apparatus.

拆除吊装绳索等。

Make sure that the drive is in the CLOSED position.

确保驱动机构处于“关”位。

Check that the disconnector is in the CLOSED position.

检查隔离开关应处于合闸位置。

In order to ensure the best grip, before installing the drive shaft of the switchgear, polish with abrasive paper the lower part of the shaft for a length of about 150 mm.

为保证最佳夹紧，在安装开关设备的传动杆前，用砂纸将传动杆下端约 150 mm 长的范围内抛光。

Check also that the internal surface of the clamp is free from any trace of grease or other impurities.

还要检查卡箍的内表面没有任何油脂痕迹或杂质。

Important 重要

Remove the lower fastening bolt installed previously and, by pivoting on the other bolt still installed, tilt the drive to permit the installation of the second section (7.7.2 Fig. 7A) of the vertical drive shaft.

拆除以前装上的下部紧固螺栓，让操作机构沿未拆除的螺栓转动翘起，以便安装垂直驱动轴的第二部分（图 7A 之 7.7.2）。

Insert the top of the second section of the vertical drive shaft (7.7.2 Fig. 7A) into the connection hub (7.19 Fig. 7A) of the base and lock it in the correct position with the lock pin and the cotter pins (7.18 Fig. 7A).

将垂直驱动轴（图 7A 之 7.7.2）第二部分的上端插入底座上的连接轮毂（图 7A 之 7.19）并用锁定销和开口销（图 7A 之 7.18）将其锁定于正确的位置。

If the vertical drive shaft is supplied as one piece (without intermediate guide), insert directly the top of the vertical drive shaft (7.7 Fig. 7) into the hub (5.15 Fig. 5) of the rotary disc (5.11 Fig. 5) on the side of the female arm and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

如果垂直驱动轴是作为一个整体提供的（没有中间导轨），那么将垂直驱动轴（图 7 之 7.7）的顶端直接插入雌刀臂一侧转动盘（图 5 之 5.11）上的轮毂（图 5 之 5.15）内并使用专用销钉和开口销（图 7 之 7.13）将其锁定于最终位置。

While keeping the drive at a slant, insert the bottom of the vertical drive shaft (7.7 Fig. 7), or the bottom of the lower section (7.7.2 Fig. 7A) into the clamp (7.12 Fig. 7).

在使操作机构保持倾斜的同时，把垂直驱动轴（图 7 之 7.7）的底部，或下半部分（图 7A 之 7.7.2）的底部插入卡箍（图 7 之 7.12）。

Bring back the drive to the correct position and fasten the other fastening bolts to the support structure.

让驱动机构回复原正确位置，将其他紧固螺栓于支架上拧紧。

If needed, loosen the bolts that fasten the drive to the structure, raise or lower the drive and then tighten the bolts again, in order to get - when the adjustment is complete - the exact dimensions shown in the specific DIN-... installation drawing.

如必要，松开固定驱动机构和支架的螺栓，提起或放下驱动机构，然后重新拧紧螺栓，以便在所有调整完成后，获得与相应安装图 DIN-…完全一致的尺寸。

Check also that the drive is horizontal in two perpendicular directions, if needed shim the fastening devices.

确保驱动机构在两个互相垂直的方向皆处于水平位置。必要时用垫片通过紧固元件垫平。

Fasten temporarily the clamp (7.12 Fig. 7), but do not tighten the screws (7.10 Fig. 7).

临时固定卡箍（图 7 之 7.12），但不要将螺钉（图 7 之 7.10）拧紧。

Check that the drive shaft is vertical in the two perpendicular directions.

确保驱动轴在两个互相垂直的方向皆处于垂直位置。

Now you can tighten the clamp (7.12 Fig. 7) with the screws (7.10 Fig. 7) - with a torque of around 80 Nm - to lock the shaft. In order to assist in this operation, apply some normal grease on the bolts.

现在可以用螺钉（图 7 之 7.10）紧固卡箍（图 7 之 7.12）将轴锁死，拧紧扭矩约 80 Nm。为便于操作，可在螺栓上加普通脂。

6.4 INSTALLATION OF THE SINGLE-POLE S2DAT DISCONNECTOR

单极 S2DAT 隔离开关的安装

6.4.1 Lower base with earthing switch (Fig. 1A, 1B, 5A, 5B, 5D, 5E)

带有接地开关的下底座（图 1A, 1B, 5A, 5B, 5D, 5E）

The earthing switch (8.0 Fig. 1A, 1B) is shipped assembled on the respective lower base (5.0 Fig. 1A, 1B).

接地开关（图 1A, 1B 之 8.0）是被装配在相应下底座（图 1A, 1B 之 5.0）上发运的。

Lift, as shown in figure A, the lower base (5.0 Fig. 5A, 5D) - with the earthing switch (8.0 Fig. 5A, 5D) already assembled on it - and, after checking that its position is correct, in agreement with the specific DIN-... installation drawing, lay it down on the installed support structure (4.0 Fig. 1A, 1B), with the fastening holes aligned.

如图 A 所示提起已经装配好接地开关（图 5A, 5D 之 8.0）的下底座（图 5A, 5D 之 5.0），而且在查明其位置正确并且和具体的 DIN-…安装图纸一致以后，把它放下到已经安装好的支架结构（图 1A, 1B 之 4.0）上，对准紧固孔。

Fasten temporarily the lower base to the support structure.

把下底座临时固定在支架结构上。

Release the lifting apparatus.

拆除吊装绳索等。

With the spirit level, check that all the rotary discs (5.11 and 5.12 Fig. 5A, 5D) that support the rotary insulators (1.1 Fig. 1A, 1B) are horizontal in the two perpendicular directions. If needed shim with the C-washers on the bolts, between the support structure and the brackets of the bases, until the bases are adequately level.

用水平仪检查支承旋转绝缘子（图 1A, 1B 之 1.1）的所有旋转盘（图 5A, 5D 之 5.11 和 5.12），要求这些表面在互相垂直的两个方向都是水平的。必要时，可在螺栓上，底座的支承结构和支架间，借助 C 形垫片适当地为底座找平。

Before fastening finally the base to the structure, check also that:

将底座最终固定于支架前，还要检查：

- the base is aligned with the support structure;
底座和支架结构对准；
- the base is level;
底座保持水平；
- during final fastening no deformation has taken place altering the adjustments already carried out. If needed repeat the operations above.
最终紧固时，是否发生变形，从而改变了已取得的调整结果。必要时，重复上述调整。

6.4.2 *Rotary insulators (Fig. 1A, 1B, 2D, 5A, 5B, 5D, 5E)*

旋转绝缘子（图 1A, 1B, 2D, 5A, 5B, 5D, 5E）

Turn the rotary discs (5.11 and 5.12 Fig. 5A, 5D) by hand and set the disconnector to the CLOSED position as shown in figure 5.

用手转动旋转盘（图 5A, 5D 之 5.11 和 5.12）并按图 5 所示将隔离开关置于合闸位置。

Remove the stop plate (5.14 Fig. 5A, 5D) installed on the rotary disc (5.11 Fig. 5A, 5D) on the side of the female arm and the interlocking plate (5.23 Fig. 5A, 5D) installed on the rotary disc (5.12 Fig. 5A, 5D) on the side of the male arm; take notice of their positions and mark them.

取下安装在雌刀臂一侧转动盘（图 5A, 5D 之 5.11）上的限位板（图 5A, 5D 之 5.14）和安装在雄刀臂一侧转动盘（图 5A, 5D 之 5.12）上的互锁板（图 5A, 5D 之 5.23）；注意其位置并做上记号。

Lift the insulators (1.1 Fig. 1A, 1B) as shown in figure A and lay them down slowly onto the rotary discs.

如图 A 所示提起绝缘子（图 1A, 1B 之 1.1）并把它缓慢地向下放到转动盘上。The position of each insulator is correct when the holes of the upper flange are at 45° in relation to the longitudinal axis of the base (Fig. 2D).

当上法兰上的孔相对于底座（图 2D）纵轴成 45° 时，各绝缘子的位置就是正确的。

Install again on the rotary disc (5.11 Fig. 5A, 5D) on the side of the female arm the stop plate (5.14 Fig. 5A, 5D) and on the rotary disc (5.12 Fig. 5A, 5D) on the side of the male arm the interlocking plate (5.23 Fig. 5A, 5D) previously removed, do not tighten them finally.

重新装上先前取下的安装在雌刀臂一侧转动盘（图 5A, 5D 之 5.11）上的限位板（图 5A, 5D 之 5.14）和安装在雄刀臂一侧转动盘（图 5A, 5D 之 5.12）上的互锁板（图 5A, 5D 之 5.23），不要最后拧紧。

Fasten the stop plate and the interlocking plate together with the insulators with the specific screws as shown in figure 2D.

如图 2D 所示，用专门的螺钉把限位板和互锁板一起固定到绝缘子上。

Complete the fastening of the insulators with the remaining bolts.

用余下的螺栓完成绝缘子的固定。

With the spirit level, laid on the upper flange of each insulator, check that the flange is level in the two perpendicular directions as shown in figure 2D.

在每个绝缘子的上法兰上用水平仪检查法兰是否如图 2D 所示在两个垂直方向上水平。

Turn the rotary discs (5.11 and 5.12 Fig. 5A, 5D) by hand and set them to the OPEN positions.

用手转动转动盘（图 5A,5D 之 5.11 和 5.12）并把它们置于开闸位置。

With the spirit level, check again that the upper flange of each insulator is level.

用水平仪再次检查每个绝缘子的上环缘是否水平。

Check also that during the rotation the insulator (1.1 Fig. 1A, 1B) turns around its axis without describing a cone (Fig. 2D). If needed insert the C-washers (Fig. 2D) between the flange and the rotary disc, until the system reaches the required conditions. When you have achieved the required conditions, tighten the fastening bolts. Take into account that any C-washers should be inserted on the bolts as shown in figure 2D so that slanted supporting planes are created for the flanges of the insulator, in order to avoid stressing the flanges.

同时检查旋转绝缘子（图 1A, 1B 之 1.1）能绕其轴转动绕其轴自由转动而不发生摩擦

（图 2D）运行。如有必要，在环缘和旋转盘之间插入专用 C 型垫圈（图 2D），直至系统达到所需状态。当你获得所需状态以后拧紧紧固螺栓。注意任一个 C 型垫圈都必须按图 2D 所示方式插入，从而为螺栓形成一个倾斜的支承表面，来防止压力作用到绝缘子环缘上。

Finally check that the distances between the centers of the insulators are as indicated in the installation drawing DIN-...

最后检查各绝缘子轴线间的距离，确保这些尺寸与安装图 DIN-…所示相同。

6.4.3 Fixed contacts of the earthing switch (Fig. 9)

接地开关静触头（图 9）

Important 重要

The fixed contact of the earthing switch is installed in the same way on the male arm and on the female arm.
在雄刀臂和雌刀臂上安装接地开关静触头的方法相同。

Important 重要

To ensure the best electric contact between the parts, the contact surfaces between the arm and the fixed contact must be cleaned and treated with antioxidant paste in accordance with the procedure described in Section 6.1.

为确保部件之间最好的电气接触，在刀臂和静触头之间的接触表面必须加以清洁并根据第 6.1 节内描述的步骤用抗氧化化糊剂加以处理。

Install the fixed-contact unit (9.0 Fig. 9) of the earthing switch on the female arm (2.1 Fig. 2, 2.10 Fig. 2A, 2.20 Fig. 2B) or on the male arm (2.2 Fig. 2, 2.11 Fig. 2A, 2.21 Fig. 2B) using the specific contact-holding plate (9.1 Fig. 9) and the respective fastening screws (9.2 Fig. 9).

用特殊的触头保持板(图 9 之 9.1)和相应的紧固螺钉(图 9 之 9.2)把接地开关的静触头部件(图 9 之 9.0)安装到雌刀臂(图 2 之 2.1、图 2A 之 2.10、图 2B 之 2.20、)或雄刀臂(图 2 之 2.2、图 2A 之 2.11、图 2B 之 2.21)上。

If the earthing switch is positioned on the side of the male arm, the distance between the centerline of the fixed contact (9.3 Fig. 9) and the centerline of the insulator (1.1 Fig. 1A, 1B) must be 150 mm, as indicated in the figures 5A and 9.

如果接地开关被置于雄刀臂一侧，静触头(图 9 之 9.3)的中心线和绝缘子(图 1A、1B 之 1.1)的中心线之间的距离必须为 150mm, 如图 5A 和图 9 所示。

If the earthing switch is positioned on the side of the female arm, the distance between the centerline of the fixed contact (9.3 Fig. 9) and the centerline of the insulator (1.1 Fig. 1A, 1B) must be 220 mm, as indicated in the figures 5D and 9.

如果接地开关被置于雌刀臂一侧，静触头(图 9 之 9.3)的中心线和绝缘子(图 1A、1B 之 1.1)的中心线之间的距离必须为 220mm, 如图 5D 和图 9 所示。

6.4.4 Mobile live part (Fig. 1A, 1B, 2, 2A, 2B)

动过流部件 (图 1A, 1B, 2, 2A, 2B)

The figures 2, 2A and 2B show the live parts for rated currents of 1250, 1600-2000 and 2500 A respectively.

Important 重要

图 2, 2A, 和 2B 所示为额定电流分别为 1250,1600-2000 和 2500A 的通流部件。

The following installation procedure applies to all types of live parts.

以下所述的安装程序适用于所有三种通流部件。

Important 重要

The contacts (2.3 and 2.5 Fig. 2, 2.12 and 2.14 Fig. 2A, 2.22 and 2.24 Fig. 2B) are protected with neutral Vaseline before shipment. Before carrying out the installation, clean carefully the surfaces with a dry cloth and then apply the grease indicated in Fig. 10 with a brush (the quantity required for the first greasing is included in the supply).

装运以前，触头（图 2 之 2.3 和 2.5，图 2A 之 2.12 和 2.14，图 2B 之 2.22 和 2.24）被中性凡士林保护层盖上。安装前，用干布小心清除，然后用刷子按图 10 加润滑油脂（货物已包含第一次加脂所需要的润滑油脂）。

The two arms, the male arm (2.2 Fig. 2, 2.11 Fig. 2A, 2.21 Fig. 2B) and the female arm (2.1 Fig. 2, 2.10 Fig. 2A, 2.20 Fig. 2B), that make up the live part of the disconnector are not symmetrical.

组成隔离开关通流部分的两个刀臂，雄的（图 2 之 2.2, 图 2A 之 2.11, 图 2B 之 2.21）和雌的（图 2 之 2.1, 图 2A 之 2.10, 图 2B 之 2.20），并不是对称的。

If the arms are swapped, the disconnector does not work and any operation may damage the live parts.

**Caution 注意**

如果两臂装反了的话，隔离开关将不能正常工作，并且任何操作都有可能损害通流部分。

Each arm must therefore be installed in the respective rotary insulator.

因此，每一个刀臂都必须安装在相应的转动绝缘子上。

With the poles of the disconnector in the OPEN position, lift the arms as shown in figure A and install them on the respective insulators and - with the screws, nuts, plain and spring washers - fasten them to the flanges of the rotary insulators.

使隔离开关的相处于分闸状态，如图 A 所示起吊刀臂并将它们安装到相应的绝缘子上，然后使用螺钉，螺母，平垫圈和弹簧垫圈将它们固定到旋转绝缘子的环缘上。

With a manual operation set the disconnector to the CLOSED position.

进行一次手动操作将隔离开关置于合闸位置。

6.4.5 Line terminal clamps (Fig. 2C)

端子连接夹 (图 2D)

This paragraph contains the instructions for installing or replacing the clamps (2.50 Fig. 2C) of the line terminals.

本段内含有安装或更换电线端子连接夹（图 2C 之 2.50）的说明。

Important 重要

Before installing the clamps, clean and prepare the contact surfaces on the shanks and inside the clamps in accordance with the procedure described in paragraph 6.2.

在安装连接夹之前，请按照 6.2 段内说明的程序清洁并准备好连接头以及连接夹内部的触头表面。

When the poles of the disconnector are in CLOSED position and the terminals are disconnected, the flexible conductors (2.52 Fig. 2A) tend to unwind and turn the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B), which moves it away from the correct position.

当隔离开关的电极处于合闸状态而且端子断开的情况下，可弯曲的导线（图 2A 之 2.52）倾向于展开并推向连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27），并使其从正确的位置向外移动。

Therefore, before installing the clamps (2.50 Fig. 2A) of the line terminals, align suitably the shanks (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) with the live parts.

因此，在安装接线端的连接夹（图 2A 之 2.50）之前，请把连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）适当地对准带电部件。

To this purpose, grasp the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) with your hands and turn it in the correct direction (counterclockwise for the female arm and clockwise for the male arm) until it strikes the respective closing end stop (see Fig. 2C); in this position the flexible conductors (2.52 Fig. 2A) are completely wound.

为此，要用手抓住连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）并把它转向正确的方向（雌刀臂为逆时针方向而雄刀臂为顺时针方向（直至其触及各自的合闸端头挡板（见图 2C）；在这一位置，可弯曲的导线（图 2A 之 2.52）就被完全弯曲了。

Insert then a screwdriver, or other suitable tool, into the hole "F" of Fig. 2C to hold the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) fixed when installing the clamp (2.50 Fig. 2A).

然后用一把螺丝刀，或其他合适的工具插入图 2C 内的孔 “F” 以便在安装连接夹（图 2A 之 2.50）时使连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）保持不动。

Finally insert the clamp (2.50 Fig. 2A) on the shank (2.8 Fig. 2, 2.17 Fig. 2A, 2.27 Fig. 2B) and align it with the longitudinal axis of the live part; tighten then the fastening screws (2.51 Fig. 2A) with the required torque.

最后插入连接头（图 2 之 2.8, 图 2A 之 2.17, 图 2B 之 2.27）上的连接夹（图 2A 之 2.50）并把它对准带电部件的纵轴；用所需的扭矩拧紧固定螺钉（图 2A 之 2.51）。

6.4.6 Earthing switches(Fig. 5A, 5B, 5D, 5E, 8)

接地开关（图 5A, 5B, 5D, 5E, 8）

With reference to the figures 5A and 5D, set the adjustable control lever (5.16 Fig. 5A, 5D) of the earthing switch to the CLOSED position.

参照图 5A 和图 5D，把接地开关的可调整控制杆（图 5A, 5D 之 5.16）设定为合闸位置。

While keeping the adjustable control lever (5.16 Fig. 5A, 5D) in the position described above, install the earthing switch (8.0 Fig. 8) in the horizontal position (OPEN) and without fastening it finally.

在把可调整控制杆（图 5A, 5D 之 5.16）保持在如上所述位置的同时，把接地开关（图 8 之 8.0）安装在水平位置（开闸）而不要最后拧紧它。

The mobile arm (8.1 Fig. 8) of the earthing switch is fastened to the horizontal transmission shaft (5.31 Fig. 5A, 5D) with the specific U-bolts (8.7 Fig. 8) and fastening nuts (8.8 Fig. 8).

接地开关的动刀臂（图 8 之 8.1）被固定于带有专门 U 型螺栓（图 8 之 8.7）和紧固螺帽（图 8 之 8.8）的水平传动轴（图 5A, 5D 之 5.31）上。

Then, while holding in fixed positions the adjustable control lever (5.16 Fig. 5A, 5D) and the shaft (5.31 Fig. 5A, 5D), turn by hand the mobile arm (8.1 Fig. 8) until you reach the CLOSED position with the mobile contact (8.2 Fig. 8) engaged with the fixed contact (9.0 Fig. 9) and resting on the respective end stop (9.5 Fig. 9).

接着，在使可调整控制杆（图 5A, 5D 之 5.16）和水平传动轴（图 5A, 5D 之 5.31）保持在固定位置的同时，用手转动动刀臂（图 8 之 8.1）直至达到合闸位置，即动触头（图 8 之 8.2）和静触头（图 9 之 9.0）相互咬合并且静止于各自的端头挡板（图 9 之 9.5）。

Tighten then finally the nuts (8.8 Fig. 8) to fasten the mobile arm (8.1 Fig. 8).

最后拧紧螺帽（图 8 之 8.8）来紧固动刀臂（图 8 之 8.1）。

Connect the stranded conductors (8.9 Fig. 8) to the lower bases with the specific bolts.

用专门的螺栓把绞合导线（图 8 之 8.9）连接到下底座上。

6.4.7 Support of the vertical drive shaft of the earthing switch (Fig. 5A, 5B, 5D, 5E)

接地开关（图 5A, 5B, 5D, 5E）垂直驱动轴的支架

Install the support (5.16 Fig. 5B, 5E) of the vertical drive shaft of the earthing switch, including the control lever (5.17 Fig. 5B, 5E), under the support structure (4.0 Fig. 5B, 5E) with the specific bolts (5.32 Fig. 5B, 5E) and including the slanting shimming plates.

用专门的螺栓（图 5B, 5E 之 5.32）并包括倾斜垫板把接地开关垂直驱动轴的支架（图 5B, 5E 之 5.16），包括控制杆（图 5B, 5E 之 5.17），安装到支架结构（图 5B, 5E 之 4.0）的下方。

Set manually the line disconnector to the OPEN position and the earthing switch to the CLOSED position, with the male mobile contact (8.2 Fig. 8) resting on the end stop of the fixed contact (9.5 Fig. 9) as shown in figure 9.

将线路隔离开关人工设定到开闸位置并将接地开关设定为合闸位置，且雄动触头（图 8 之 8.2）需静止在静触头（图 9 之 9.5）的端头挡板上，如图 9 所示。

With reference to the figures 5B and 5E, set the control lever (5.17 Fig. 5B, 5E) of the earthing switch in the CLOSED position.

参考图 5B 和图 5E，将接地开关的控制杆（图 5B, 5E 之 5.17）设定到合闸位置。

Remove the ties that hold the thrust linkage (5.18 Fig. 5B, 5E) and remove the nut and the spring washer of the ball joint located at the free end of the linkage.

解除保持调节连杆（图 5B, 5E 之 5.18）的连接并取下位于连杆自由端球形接头上的螺母及弹簧垫圈。

Connect the control lever (5.17 Fig. 5B, 5E) to the linkage (5.18 Fig. 5B, 5E) with the nut and spring washer removed previously.

先把螺母及弹簧垫圈取下后将控制杆（图 5B, 5E 之 5.17）连接到调节连接杆上（图 5B, 5E 之 5.18）。

6.4.8 Intermediate guide and upper sections of the vertical drive shafts (Fig. 1A, 1B, 4B, 4D, 7A)

中间导轨和垂直转动轴（图 1A, 1B, 4B, 4D, 7A）的上半部分。

The vertical drive shaft of the disconnector may be shipped in two sections (7.7.1 and 7.7.2, 7.8.1 and 7.8.2 Fig. 1A, 1B) according to the height of the support pillars.

根据其支持柱子的高度，隔离开关的垂直驱动轴可能被分成两部分（图 1A 和 1B 之 7.7.1 和 7.7.2, 7.8.1 和 7.8.2）发运。

Important 重要

In this case, a special intermediate support guide must be installed on the support pillar.

在此情况下，在支持柱子上必须安装一个特别的中间支持导轨。

Insert the top of the first section (7.7.1 Fig. 7A) of the vertical drive shaft into the hub (5.15 Fig. 5A, 5D) of the rotary disc (5.11 Fig. 5A, 5D) on the side of the female arm and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

把垂直驱动轴第一部分（图 7A 之 7.7.1）的顶端插入雌刀臂一侧转动盘（图 5.11 之 5A 和 5D）的轮毂（图 5.15 之 5A 和 5D）并用专门的销钉和开口销（图 7 之 7.13）将其锁定于其最终的位置上。

Insert the top of the first section (7.8.1 Fig. 7A) of the vertical drive shaft into the hub (5.30 Fig. 5A, 5D) of the control lever (5.17 Fig. 5A, 5D) of the earthing switch and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

将垂直转动轴第一部分（图 7A 之 7.8.1）的顶部插入接地开关的控制杆（图 5A, 5D 之 5.17）的轮毂（图 5A, 5D 之 5.30）中并使用专用销钉和开口销（图 7 之 7.13）将其锁定于最终位置。

Insert the connection hubs (7.19 Fig. 7A) including guide plates (4.17 Fig. 7A) and lock rings (7.20 Fig. 7A), into the bottoms of the first sections (7.7.1, 7.8.1 Fig. 7A) of the vertical drive shafts and fasten them with the specific pin and cotter pins (7.17 Fig. 7A).

把包括导板（图 7A 之 4.17）和锁定环（图 7A 之 7.20）在内的连接轮毂（图 7A 之 7.19），插入到垂直转动轴第一部分（图 7A 之 7.7.1, 7.8.1）的底部并以专用销钉和开口销（图 7A 之 7.17）将它们拧紧。

With reference to figures 4B and 4D, position the support brackets (4.15 Fig. 4B, 4D) - including the supports (4.16 Fig. 4B, 4D) - at the level of the guide plates (4.17 Fig. 7A).

参考图 4B 和 4D，把支架托架（图 4B, 4D 之 4.15）包括支架（图 4B, 4D 之 4.16）置于和导板（图 7A 之 4.17）同一水平的位置上。

Fasten temporarily the brackets (4.15 Fig. 4B, 4D) to the support pillar using the respective threaded bars (4.21 Fig. 4B, 4D), with nuts and spring washers.

用带有螺母和弹簧垫圈的相应牙条（图 4B, 4D 之 4.21）把托架（图 4B, 4D 之 4.15）临时紧固到支持柱上。

Fasten temporarily the guide plates (4.17 Fig. 7A) to the supports (4.16 Fig. 7A) with the respective bolts (4.19 Fig. 7A).

用相应的螺栓（图 7A 之 4.19）把导板（图 7A 之 4.17）临时紧固到支架（图 7A 之 4.16）上。

Check that the upper sections (7.7.1, 7.8.1 Fig. 7A) of the drive shafts are vertical in the two perpendicular directions and that the guide plates (4.17 Fig. 4B, 4D) are horizontal and aligned with the centerline of the lower base.

检查驱动轴的上半部分（图 7A 之 7.7.1, 7.8.1）是否在两个竖直方向上垂直而且导板（图 4B, 4D 之 4.17）是否水平并对准下底座的中心线。

Check also that the upper sections (7.7.1, 7.8.1 Fig. 7A) of the vertical drive shafts can turn freely and without friction.

同时检查垂直驱动轴的上半部分（图 7A 之 7.7.1, 7.8.1）能够自由而无阻力地转动。

Fasten finally the brackets (4.15 Fig. 4B, 4D) to the pillar tightening the nuts of the threaded bars (4.21 Fig. 4B, 4D) and tighten the bolts (4.19 Fig. 7A) that fasten the guide plates (4.17 Fig. 7A).

最后将托架（图 4B, 4D 之 4.15）紧固到柱子上，紧固牙条（图 4B, 4D 之 4.12）上的螺帽并扣紧用于紧固导板（图 7A 之 4.17）的螺栓（图 7A 之 4.19）。

6.4.9 Lower section of the vertical drive shaft and drive (Fig. 7, 7A)

垂直驱动轴的下半部分和操作机构（图 7, 7A）

Important 重要

Before carrying out the installation, check that the serial number of the drive is the same as the serial number of the switchgear.

进行安装前，确保驱动机构的系列号与开关设备的系列号相同。

Lift the drive as shown in figure A; take the back of the device toward the support structure (4.0.2 Fig. 1A, 1B) and take care that the holes on the drive (7.11 Fig. 7) match the holes on the structure.

按图 A 所示吊起操作机构；使该装置的背部朝向支架结构（图 1A 和 1B 之 4.0.2）并且注意使操作机构（图 7 之 7.11）上的孔和支架结构上的孔相匹配。

Fasten temporarily two bolts diagonally; do not tighten them.

暂时拧上两个对角线方向上的螺栓；但不要拧紧。

Release the lifting apparatus.

拆除吊装绳索等。

Make sure that the drive is in the CLOSED position.

确保驱动机构处于“关”位。

Check that the disconnector is in the CLOSED position.

检查隔离开关应处于合闸位置。

Important 重要

In order to ensure the best grip, before installing the drive shaft of the switchgear, polish with abrasive paper the lower part of the shaft for a length of about 150 mm.

为保证最佳夹紧，在安装开关设备的传动杆前，用砂纸将传动杆下端约 150 mm 长的范围内抛光。

Check also that the internal surface of the clamp is free from any trace of grease or other impurities.

还要检查卡箍的内表面没有任何油脂痕迹或杂质。

Remove the lower fastening bolt installed previously and, by pivoting on the other bolt still installed, tilt the drive to permit the installation of the second section (7.7.2 Fig. 7A) of the vertical drive shaft.

拆除以前装上的下部紧固螺栓，让操作机构沿未拆除的螺栓转动翘起，以便安装垂直驱动轴的第二部分（图 7A 之 7.7.2）。

Insert the top of the second section of the vertical drive shaft (7.7.2 Fig. 7A) into the connection hub (7.19 Fig. 7A) of the base and lock it in the correct position with the lock pin and the cotter pins (7.18 Fig. 7A).

将垂直驱动轴（图 7A 之 7.7.2）第二部分的上端插入底座上的连接轮毂（图 7A 之 7.19）并用锁定销和开口销（图 7A 之 7.18）将其锁定于正确的位置。

If the vertical drive shaft is supplied as one piece (without intermediate guide), insert directly the top of the vertical drive shaft (7.7 Fig. 7) into the hub (5.15 Fig. 5A, 5D) of the rotary disc (5.11 Fig. 5A, 5D) on the side of the female arm and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

如果垂直驱动轴是作为一个整体提供的（没有中间导轨），那么将垂直驱动轴（图 7 之 7.7）的顶端直接插入雌刀臂一侧转动盘（图 5A 和 5D 之 5.11）上的轮毂（图 5A 和 5D 之 5.15）内并使用专用销钉和开口销（图 7 之 7.13）将其锁定于最终位置。

While keeping the drive at a slant, insert the bottom of the vertical drive shaft (7.7 Fig. 7), or the bottom of the lower section (7.7.2 Fig. 7A) into the clamp (7.12 Fig. 7). 在使操作机构保持倾斜的同时，把垂直驱动轴（图 7 之 7.7）的底部，或下半部分（图 7A 之 7.7.2）的底部插入卡箍（图 7 之 7.12）。

Bring back the drive to the correct position and fasten the other fastening bolts to the support structure.

让驱动机构回复原正确位置，将其他紧固螺栓于支架上拧紧。

If needed, loosen the bolts that fasten the drive to the structure, raise or lower the drive and then tighten the bolts again, in order to get - when the adjustment is complete - the exact dimensions shown in the specific DIN-... installation drawing. 如必要，松开固定驱动机构和支架的螺栓，提起或放下驱动机构，然后重新拧紧螺栓，以便在所有调整完成后，获得与相应安装图 DIN-…完全一致的尺寸。

Check also that the drive is horizontal in two perpendicular directions, if needed shim the fastening devices.

确保驱动机构在两个互相垂直的方向皆处于水平位置。必要时用垫片通过紧固元件垫平。

Fasten temporarily the clamp (7.12 Fig. 7), but do not tighten the screws (7.10 Fig. 7).

临时固定卡箍（图 7 之 7.12），但不要将螺钉（图 7 之 7.10）拧紧。

Check that the drive shaft is vertical in the two perpendicular directions.
确保驱动轴在两个互相垂直的方向皆处于垂直位置。

Now you can tighten the clamp (7.12 Fig. 7) with the screws (7.10 Fig. 7) - with a torque of around 80 Nm - to lock the shaft. In order to assist in this operation, apply some normal grease on the bolts.

现在可以用螺钉（图 7 之 7.10）紧固卡箍（图 7 之 7.12）将轴锁死，拧紧扭矩约 80 Nm。为便于操作，可在螺栓上加普通脂。

6.4.10 Lower section of the vertical drive shaft and drive of the earthing switch (Fig. 7, 7A)

垂直驱动轴的下半部分和接地开关（图 7, 7A）的操作机构

Important 重要

Before carrying out the installation, check that the serial number of the drive is the same as the serial number of the switchgear.

进行安装前，确保驱动机构的系列号与开关设备的系列号相同。

Lift the drive as shown in figure A; take the back of the device toward the support structure (4.0.2 Fig. 1A, 1B) and take care that the holes on the drive (7.11 Fig. 7) match the holes on the structure.

按图 A 所示吊起操作机构；使该装置的背部朝向支架结构（图 1A 和 1B 之 4.0.2）并且注意使操作机构（图 7 之 7.11）上的孔和支架结构上的孔相匹配。Fasten temporarily two bolts diagonally; do not tighten them.

暂时拧上两个对角线方向上的螺栓；但不要拧紧。

Release the lifting apparatus.

拆除吊装绳索等。

Make sure that the drive is in the CLOSED position.

确保驱动机构处于“关”位。

Set manually the earthing switch to the OPEN position, with the male mobile contact (8.2 Fig. 8) resting on the end stop of the fixed contact (9.5 Fig. 9) as shown in figure 9.

将接地开关手动设置到开闸位置，且雄动触头（图 8 之 8.2）静止于静触头（图 9 之 9.5）的端头挡板上，如图 9 所示。

In order to ensure the best grip, before installing the drive shaft of the switchgear, polish with abrasive paper the lower part of the shaft for a length of about 150 mm.

为保证最佳夹紧，在安装开关设备的传动杆前，用砂纸将传动杆下端约 150 mm 长的范围内抛光。

Important 重要

Check also that the internal surface of the clamp is free from any trace of grease or other impurities.

还要检查卡箍的内表面没有任何油脂痕迹或杂质。

Remove the lower fastening bolt installed previously and, by pivoting on the other bolt still installed, tilt the drive to permit the installation of the second section (7.8.2 Fig. 7A) of the vertical drive shaft.

拆除以前装上的下部紧固螺栓，让操作机构沿未拆除的螺栓转动翘起，以便安装垂直驱动轴的第二部分（图 7A 之 7.8.2）。

Insert the top of the second section of the vertical drive shaft (7.8.2 Fig. 7A) into the connection hub (7.19 Fig. 7A) of the base and lock it in the correct position with the lock pin and the cotter pins (7.18 Fig. 7A).

将垂直驱动轴（图 7A 之 7.8.2）第二部分的上端插入底座上的连接轮毂（图 7A 之 7.19）并用锁定销和开口销（图 7A 之 7.18）将其锁定于正确的位置。

If the vertical drive shaft is supplied as one piece (without intermediate guide), insert directly the top of the vertical drive shaft (7.8 Fig. 7) into the hub (5.30 Fig. 5A, 5D) of the control lever (5.17 Fig. 5A, 5D) on the side of the male arm and lock it in its final position with the specific pin and cotter pins (7.13 Fig. 7).

如果垂直驱动轴是作为一个整体提供的（没有中间导轨），那么将垂直驱动轴（图 7 之 7.8）的顶端直接插入雄刀臂一侧控制杆（图 5A, 5D 之 5.17）上的轮毂（图 5A, 5D 之 5.30）内并使用专用销钉和开口销（图 7 之 7.13）将其锁定于最终位置。

While keeping the drive at a slant, insert the bottom of the vertical drive shaft (7.8 Fig. 7), or the bottom of the lower section (7.8.2 Fig. 7A) into the clamp (7.12 Fig. 7).

在使操作机构保持倾斜的同时，把垂直驱动轴（图 7 之 7.8）的底部，或下半部分（图 7A 之 7.8.2）的底部插入卡箍（图 7 之 7.12）。

Bring back the drive to the correct position and fasten the other fastening bolts to the support structure.

让驱动机构回复原正确位置，将其他紧固螺栓于支架上拧紧。

If needed, loosen the bolts that fasten the drive to the structure, raise or lower the drive and then tighten the bolts again, in order to get - when the adjustment is complete - the exact dimensions shown in the specific DIN-... installation drawing.

如必要，松开固定驱动机构和支架的螺栓，提起或放下驱动机构，然后重新拧紧螺栓，以便在所有调整完成后，获得与相应安装图 DIN-…完全一致的尺寸。

Check also that the drive is horizontal in two perpendicular directions, if needed shim the fastening devices.

确保驱动机构在两个互相垂直的方向皆处于水平位置。必要时用垫片通过紧固元件垫平。

Fasten temporarily the clamp (7.12 Fig. 7), but do not tighten the screws (7.10 Fig. 7).

临时固定卡箍（图 7 之 7.12），但不要将螺钉（图 7 之 7.10）拧紧。

Check that the drive shaft is vertical in the two perpendicular directions.

确保驱动轴在两个互相垂直的方向皆处于垂直位置。

Now you can tighten the clamp (7.12 Fig. 7) with the screws (7.10 Fig. 7) - with a torque of around 80 Nm - to lock the shaft. In order to assist in this operation, apply some normal grease on the bolts.

现在可以用螺钉（图 7 之 7.10）紧固卡箍（图 7 之 7.12）将轴锁死，拧紧扭矩约 80 Nm。为便于操作，可在螺栓上加普通脂。

6.4.11 Mechanical interlocking device (Fig. 5C, 5F)

机械连锁装置（图 5C, 5F）

The interlocking device between the disconnector and the earthing switch driven by different drives is installed on the lower base (Fig. 5A, 5E) and is made of:

由各种不同操作机构驱动的位于隔离开关和接地开关之间的互锁装置被安装于下底座（图 5A, 5E）并由以下装置组成：

- an interlocking plate (5.23 Fig. 5A, 5E) fixed to the rotary disc (5.12 Fig. 5A, 5E) on the side of the male arm;
一个被固定在雄刀臂一侧转动盘（图 5A, 5E 之 5.12）上的互锁盘（图 5A, 5E 之 5.23）；
- an interlocking cam (5.24 Fig. 5A, 5E) integral with the control lever (5.19 Fig. 5A, 5E) of the earthing switch.
一个与接地开关的控制杆（图 5A, 5E 之 5.19）集成的互锁凸轮（图 5A, 5E 之 5.24）。

The principle of operation of the interlocking device is shown in Fig. 5C and in Fig. 5F.

互锁装置的工作原理见图 5C 和图 5F。

6.5 ADJUSTMENT OF THE S2DA / S2DAT DISCONNECTORS **S2DA/S2DAT 隔离开关的调整**

In the following sections you can find the procedures for the adjustment and fine tuning of the equipment.

以下各节里，你将看到的是设备的调整程序和微调程序。

6.5.1 Adjustment of the live part (Fig. 2E, 2F) **过流部件的调整 (图 2E, 2F)**

Carry out a slow CLOSING operation and check that all the male contacts are centered when they reach the female contacts (Fig. 2E).

执行缓慢合闸的操作并检查当所有雄触头接触到雌触头（图 2E）时它们都处于中心位置。

In the CLOSED position, check that the male and female arms complete their travels (about 90°), they are aligned (tolerance $\pm 2^\circ$) and that all the conditions shown in figures 2E and 2F are met.

在合闸位置时，检查当雄刀臂和雌刀臂完成其行程时（大约 90°），它们是对准的（误差 $\pm 2^\circ$ ），而且如图 2E 和 2F 所示的全部条件均得到满足。

Check also that the arms engage for a distance of 25 mm (tolerance -10 / +30), as shown in figures 2, 2A and 2B.

同样检查雄刀臂和雌刀臂的咬合深度为 25mm(误差-10/+30)，如图 2, 2A 和 2B 所示。

With the special crank or lever of the drive of the disconnector, OPEN (with opening angle $90^\circ \pm 4^\circ$) slowly the disconnector and check that the male contacts separate as shown in figure 2E.

使用专用曲柄或隔离开关操作机构的控制杆，慢慢打开（开闸角度为 $90^\circ \pm 4^\circ$ ）隔离开关并检查雄触头如图 2E 所示的那样分开。

If needed, you can also adjust the upper or lower part of the insulator, thanks to the freedom of positioning of the fastening holes.

如果需要，您也能够调整绝缘子的上半部分及下半部分，这是因为紧固孔的定位是自由的。

Tighten the fastening screws fully and carry out a few manual operations to check the adjustments.

完全拧紧紧固螺钉并进行几次手动操作来检查调试结果。

If needed, repeat the operations above.

必要时，重复上述调整。

6.5.2 **Adjustment of the earthing switch (Fig. 8, 9)**

对接地开关（图 8, 9）的调整

Carry out a few OPENING/CLOSING operations of the earthing switch and check that, in the CLOSED position, each mobile contact (8.2 Fig. 8) is correctly centered on the fixed contact (9.3 Fig. 9).

对接地开关执行几次开闸 / 合闸操作，确保在合闸位置时，各动触头（图 8 之 8.2）应与静触头（图 9 之 9.3）正确对中。

If needed, you can adjust the mobile arm (8.1 Fig. 8) in one or more of the following ways:

如果需要，您可以采取以下一种或几种方法来调整动刀臂（图 8 之 8.1）。

- by changing the start or end angle of the adjustable control lever (5.19 Fig. 5A and 5D). To this purpose, loosen the nuts of the fastening U-bolts, turn the lever forward or backward while keeping fixed the horizontal transmission shaft until the lever reaches the required position, then tighten the nuts again;
 通过改变可调整控制杆（图 5A 和 5D 之 5.19）的起始角度或终止角度。为此，可松开紧固 U 形螺栓的螺母，在向前和向后转动杆的同时保持水平传动轴的固定，直到控制杆达到要求的位置后重新紧固螺母；
- by changing the radius of the adjustable control lever (5.19 Fig. 5A and 5D). To do this, loosen the nut that fastens the ball joint of the thrust linkage (5.18 Fig. 5A, 5D), then move the ball joint along the slot on the lever (5.19 Fig. 5A, 5D) until the ball joint reaches the required position, then tighten the nuts again;
 通过改变可调整控制杆（图 5A 和 5D 之 5.19）的半径。为此，可松开调节连杆（图 5A, 5D 之 5.18）上球形接头的螺母，然后沿着控制杆（图 5A, 5D 之 5.19）上的槽移动球形接头直到要求的位置，然后重新紧固螺母；
- by shortening or lengthening the thrust linkage (5.18 Fig. 5A, 5D). To do this, loosen the left and right locking nuts and rotate the thrust linkage around its lengthwise axis until it reaches the required length, then tighten the nuts again.
 通过缩短或加长调节连杆（图 5A, 5D 之 5.18）。为此，可松开左边及右边的锁定螺母并沿着轴的纵向旋转调节连杆直至达到要求的长度，然后重新紧固螺母。

If needed, to center the mobile contact on the fixed contact, loosen the nuts (8.8 Fig. 8) that fasten the U-bolts (8.7 Fig. 8) and let the mobile arm (8.1 Fig. 8) slide along the horizontal transmission shaft (5.31 Fig. 5A, 5D) of the earthing switch.

如果需要，要将动触头对准静触头的中心，松开紧固 U 形螺栓（图 8 之 8.7）的螺母（图 8 之 8.8）并让动刀臂（图 8 之 8.1）沿着接地开关的水平传动轴（图 5A, 5D 之 5.31）滑动。

6.5.3 Vertical drive shaft and drive (Fig. 7)

驱动机构和垂直驱动轴（图7）

Carry out a few manual OPENING/CLOSING operations and check that the end positions (CLOSED and OPEN) of the drive match the respective end positions of the mobile arms of the switchgear.

手动执行几次“开”“关”操作，确保驱动机构开关终点正好对应于开关设备动臂相应的终点。

In order to synchronize - if needed - the mobile arm of the disconnector and the drive, you can loosen the screws (7.10 Fig. 7) that fasten the clamp (7.12 Fig. 7). You can then advance or retard the OPENING/CLOSING of the mobile arms by turning the vertical drive shaft (7.7 and 7.8 Fig. 7) while holding the clamp (7.12 Fig. 7) firmly fixed. When you have achieved the required condition, tighten the screws (7.10 Fig. 7) with a torque of around 80 Nm to lock the shaft.

必要时，为了使隔离开关的动刀臂和操作机构同步，你可以松开固定卡箍（图7之7.12）的螺钉（图7之7.10）。然后在抓住卡箍（图7之7.12）使其不动的时候，转动垂直驱动轴（图7之7.7, 7.8），来提前或延迟动刀臂的“开闸”/“合闸”动作。达到所需求以后，用约80 Nm的扭矩拧紧螺钉（图7之7.10）来锁定轴。



Danger 危险

7.1 CONNECTIONS

接线

- Connect to the station earthing system all earthing points.
将所有接地点接通电站接地系统。
- Connect electrically the drive in accordance with the wiring diagrams supplied.
按提供的接线图接通驱动机构电线。
- Connect adequately the high-voltage conductors to the line connection pads.
接线衬板里应插入足够的高压导体。
- Check that acceptable mechanical loads on the disconnector are not exceeded.
确保隔离开关上的机械负荷不超过允许值。

7.2 FINAL CHECKS AND FINE-TUNING

最终检查和微调

Important 重要

Before carrying out the fine-tuning operation described below, remove all the protection sheaths of the flexible conductors.

在执行下面描述的微调操作之前，取下所有柔性导体上的保护外壳。

Carry out some manual and motor operations and check that:
进行几次手动和电动操作，并检查：

- in the fully closed and fully open positions, the indicators (plates) located on the hub of the disc reach exactly the reference marks provided on the plate fixed on the top of the drive;
在完全打开和完全闭合位置，圆盘中心指示器正好指向固定在操作机构上的表盘上的参考标记；
- during CLOSING, the coupling of the male and female contacts occurs correctly;
合闸过程中，雄和雌触头耦合正确；
- at the rated voltage, the current consumption of the motor does not exceed the value indicated in the wiring diagram.
在额定电压下，电机的电流不超过电气接线图上的标示值。

Measure the resistance of the main circuit.

测量主电路的电阻。

For the disconnectors of the series **S2DA / S2DAT**, the values measured between the line terminals must be as in the following table:

对于 **S2DA / S2DAT** 系列隔离开关，在线路接线端之间测得的数值必须如下表所示：

	1250 A	1600-2000 A	2500 A
S2DA / S2DAT	77 $\mu\Omega$	52 $\mu\Omega$	38 $\mu\Omega$

VALUES AT 20°C, TOLERANCE $\pm 20\%$

温度为 20°C 时的测量值，容差 $\pm 20\%$

8. MAINTENANCE PLAN

维护计划

The switchgears do not require special maintenance. We recommend, however, in order to ensure the correct operation of the equipment, to carry out routine checks and maintenance actions, especially on the component parts which are most sensitive or subject to wear.

此开关设备不需要特殊的维护。然而，为了保证设备的正常运行，我们推荐进行常规的检查和维护，尤其是对那些最敏感或易磨损的部件。

The frequency of checks and maintenance actions depends on the number of operations (1000, 2000, 3000 or 10000) that have been guaranteed for the equipment supplied.

检查和维护的频率取决于所提供的设备的保证操作次数（1000, 2000, 3000 或 10000 次）。

In order to keep the guarantee of the disconnector in force, routine checks and maintenance operations must comply with the following table.

要保持工厂担保有效，常规的检查和维护必须遵照表进行。

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

安装和维护说明手册



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NTC-1955/E 表

CONDITION OF SWITCHGEAR 开关设备状态	TYPE OF ACTION TO PERFORM IN COMPLIANCE WITH THE RELEVANT INSTALLATION INSTRUCTIONS 需要依照相关安装要求进行的工作	FREQUENCY OF ACTIONS 工作频率			
		Guaranteed operations: 保证操作次数 1000	Guaranteed operations: 保证操作次数 2000	Guaranteed operations: 保证操作次数 3000	Guaranteed operations: 保证操作次数 10000
A – SWITCHGEAR IN SERVICE 运行中的开关设备	MINOR INSPECTION 简单检查 Verify: 确认	During site inspection or, in any case, every 2 years 在现场检视过程中或无论如何每2年一次	During site inspection or, in any case, every 3 years 在现场检视过程中或无论如何每3年一次	During site inspection or, in any case, every 4 years 在现场检视过程中或无论如何每4年一次	During site inspection or, in any case, every 4 years 在现场检视过程中或无论如何每4年一次
	A.1) That the mechanical parts of the equipment and of the protection surfaces are not damaged. 需要依照相关安装要求进行的工作				
	A.2) That the sheaths of the low voltage cables and of the earthing cables are not damaged. 低压电缆和接地电缆的护套没有损伤				
	A.3) That the insulators are not damaged and that there is no deposit or fouling on their surfaces. 绝缘子没有损伤且表面没有沉积污秽				
	A.4) That the drive (operating mechanism) is in working order 操作机构运转良好				
	OPTIONAL 可选				
	Verify heating with a thermal detector 用热探头检查发热情况				
B – SWITCHGEAR OUT OF SERVICE 未运行的开关设备	INSPECTION OF SWITCHGEAR 开关设备的检查	Every 5 years or every 500 operations 每5年一次或每500次操作一次	Every 5 years or every 1000 operations 每5年一次或每1000次操作一次	Every 6 years or every 1500 operations 每6年一次或每1500次操作一次	Every 8 years or every 5000 operations 每8年一次或每5000次操作一次
	B.1) Carry out the checks A.1 - A.2 - A.3 执行A.1 - A.2 - A.3项检查				
	B.2) Verify that the live parts are clean 确保所有通流部件干净整洁				
	B.3) Measure the resistance of the live parts 测量通流部件电阻				
	B.4) Verify tightening of bolts 检查螺栓松紧程度				
	B.5) Verify operation of local controls 检查现场控制运行情况				
	B.6) Verify manual operation 检查手动操作运行情况				
	B.7) Verify the correct coupling of main contacts 检查主触头耦合是否正确				
	B.8) Verify the condition of the contacts surfaces 检查触头表面状况				
	B.9) Verify that mechanical parts are adequately lubricated (Fig. 10) 确保机械部件润滑良好 (图10)				

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

安装和维护说明手册

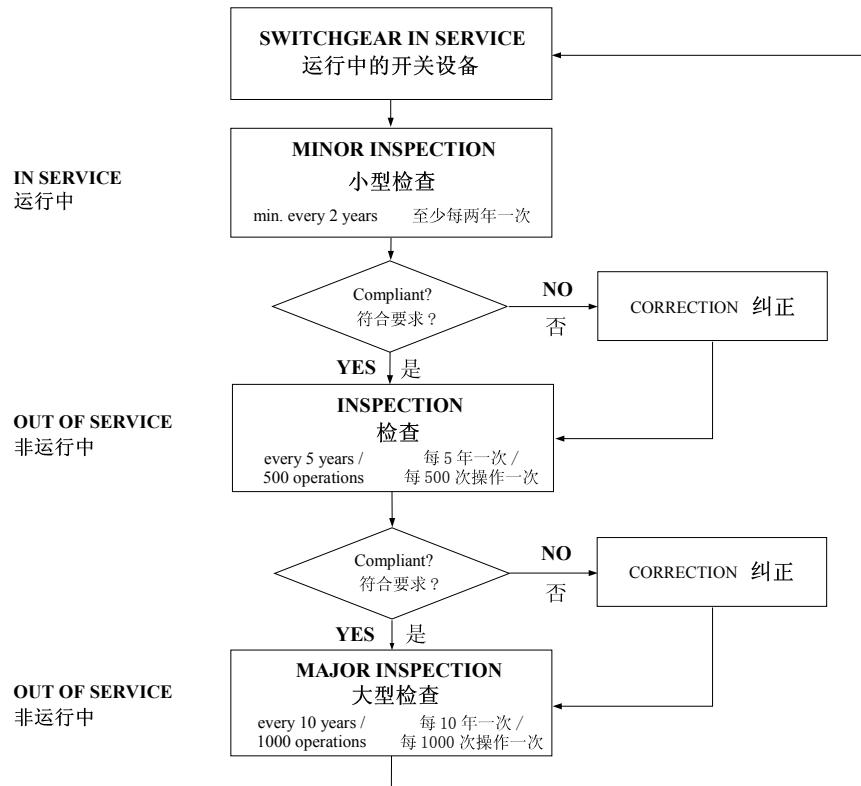


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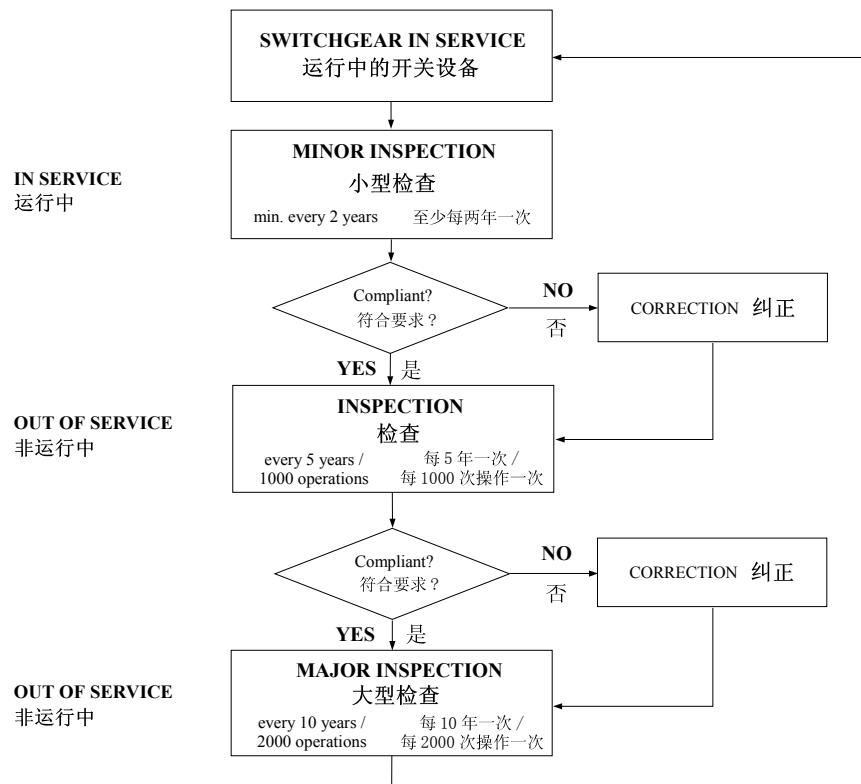
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	INSPECTION OF THE DRIVE 操作机构的检查				
	B.10) Verify that all mechanical and electrical components, cables and earthing connections are not damaged 检查所有机械和电气部件，电缆和接地连接是否损坏				
	B.11) Verify the correct operation of the following electrical components: 检查下列电器部件的运作 <ul style="list-style-type: none"> - anti-condensation and heating resistance (if any) 防凝装置和加热电阻（如果有的话） - motor protection automatic switch 电机自动保护开关 - electromechanical interlocking device 机电联锁装置 				
C – SWITCHGEAR OUT OF SERVICE 未运行的开关设备	MAJOR INSPECTION 大型检查	Every 10 years or every 1000 operations 每10年一次或每1000次操作一次	Every 10 years or every 2000 operations 每10年一次或每2000次操作一次	Every 12 years or every 3000 operations 每12年一次或每3000次操作一次	Every 15 years or every 10000 operations 每15年一次或每10000次操作一次
	C.1) Full check of the switchgear as per section B. 按照B部分对开关设备作全面检查				
	C.2) Check the condition and the wear of the main components, the condition of the insulators and the mechanical adjustments performed during first installation (see installation manual). Verify that mechanical parts are adequately lubricated (Fig. 10). If you find any deviation, restore the required conditions. In case replacement of units or components is required, comply with the procedures in the installation manual. In case of troubles or doubts on how to restore correctly the required conditions, contact AREVA. 检查主要部件的状况和磨损情况，绝缘子情况和首次安装过程中进行的机械调整（见安装手册）。确保润滑良好(图10)。如发现任何偏差，则进行调整复原。如需要更换单元部件，应遵循安装手册里的程序。如对如何调整复原有疑问，请与AREVA公司联系。				

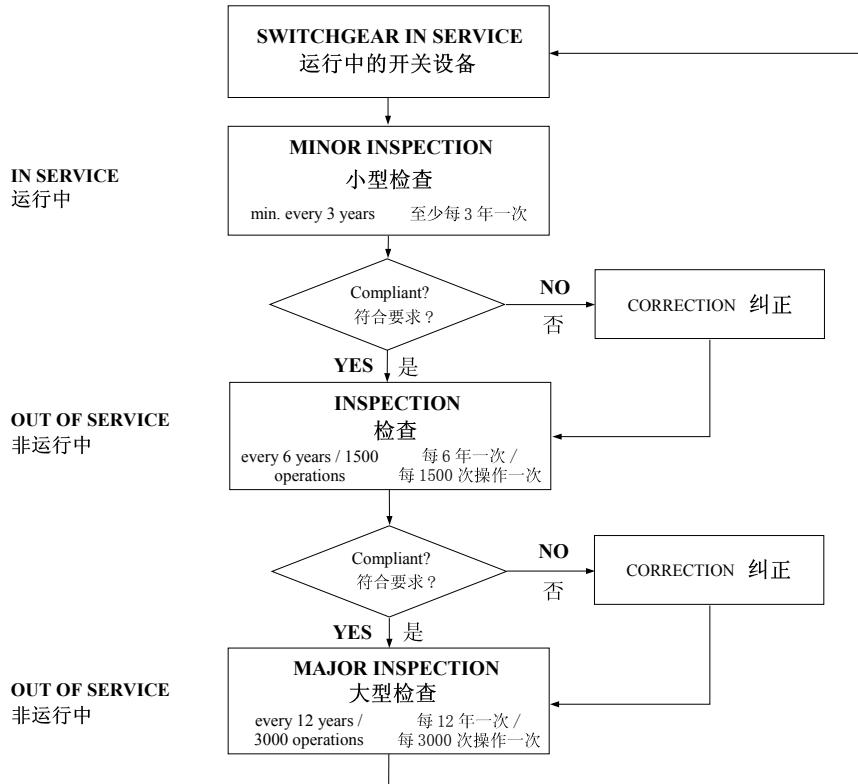
**PREVENTIVE MAINTENANCE PLAN OF SWITCHGEARS
GUARANTEED UP TO 1,000 OPERATIONS**
保证操作次数为 1000 次的开关设备预防性维护计划



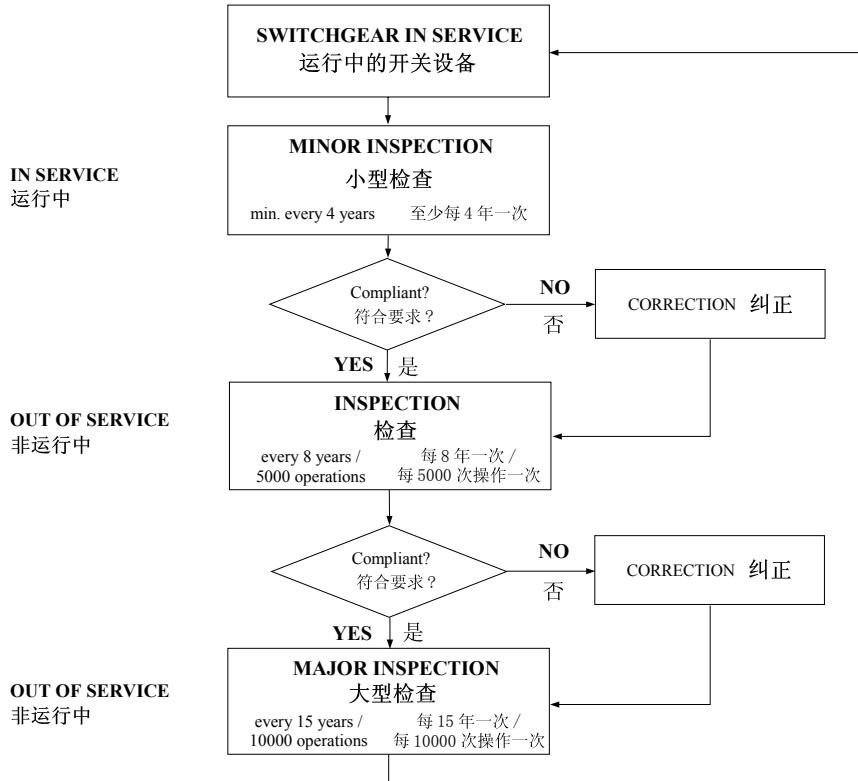
**PREVENTIVE MAINTENANCE PLAN OF SWITCHGEARS
GUARANTEED UP TO 2,000 OPERATIONS**
保证操作次数为 2000 次的开关设备预防性维护计划



**PREVENTIVE MAINTENANCE PLAN OF SWITCHGEARS
GUARANTEED UP TO 3,000 OPERATIONS**
保证操作次数为 3000 次的开关设备预防性维护计划



**PREVENTIVE MAINTENANCE PLAN OF SWITCHGEARS
GUARANTEED UP TO 10,000 OPERATIONS**
保证操作次数为 10000 次的开关设备预防性维护计划



9. DISASSEMBLING THE SWITCHGEAR AND REPLACEMENT OF MAIN PARTS

隔离开关的拆卸及主要部件的更换



9.1 DISASSEMBLING THE DISCONNECTOR

隔离开关的拆卸

WARNING: BEFORE CARRYING OUT ANY OF THE FOLLOWING OPERATIONS, MAKE SURE THAT:

警告! 在进行下列任何操作之前, 确保:

- a) the disconnector is in the OPEN position;
隔离开关处于“开”位;
- b) both the incoming and outgoing conductors are visibly connected to the earth;
所有进线和出线都已明显接地;
- c) the drive is disconnected from all low-voltage conductors.
操作机构已与所有低压导线断开。

9.1.1 Disconnection

断开

Disconnect all high-voltage conductors from the line terminals.
断开接线柱上的所有高压导线。

Disconnect all low-voltage conductors from the drive.
断开操作机构的所有低压导线。

9.1.2 Disassembly

拆卸

With the same tools used during the installation of the disconnector, but in a sequence reverse to that of Chapter 6, remove the parts in the following sequence:

采用与安装时相同的工具, 以与第 6 章中所述相反的步骤, 按下列顺序拆除部件:

S2DA DISCONNECTORS:

S2DA 隔离开关:

- vertical drive shaft and drive of the disconnector;
隔离开关的垂直驱动轴和驱动机构;
- live parts: arms with male contacts;
通流部分: 带雄触头的刀臂;
- live parts: arms with female contacts;
通流部分: 带雌触头的刀臂;

- insulators;
绝缘子;
- lower bases;
下底座;
- support structure.
支架结构.

S2DAT DISCONNECTORS:

S2DAT 隔离开关:

- vertical drive shafts and drives of the earthing switches;
接地开关的垂直驱动轴和驱动机构;
- vertical drive shaft and drive of the disconnector;
隔离开关的垂直驱动轴和驱动机构;
- live parts: arms with male contacts;
通流部分：带雄触头的刀臂；
- live parts: arms with female contacts;
通流部分：带雌触头的刀臂；
- insulators;
绝缘子;
- lower bases;
下底座;
- support structure.
支架结构.

When disassembly is complete, store correctly all components.

拆卸完成后，正确存放所有部件。

9.2 DISASSEMBLING THE EQUIPMENT AND REPLACEMENT OF MAIN PARTS

设备拆卸和主要部件的更换



WARNING: BEFORE CARRYING OUT ANY OF THE FOLLOWING OPERATIONS, MAKE SURE THAT:

警告！在进行下列任何操作之前，确保：

- A) the switchgear is in the OPEN position;
开关设备处于“开”位；
- B) both the incoming and outgoing high-voltage conductors are visibly connected to the earth.
所有进和出高压线都已明显接地。

9.2.1 Male mobile contacts (Fig. 2, 2A, 2B)

雄动触头 (图2, 2A, 2B)

To replace the male mobile contact (2.3 Fig. 2, 2.12 Fig. 2A, 2.22 Fig. 2B), proceed as follows:

要更换雄动触头（图 2 之 2.3，图 2A 之 2.12，图 2B 之 2.22），可按照如下方法进行：

- remove the male contact (2.3 Fig. 2, 2.12 Fig. 2A, 2.22 Fig. 2B) after unscrewing the screws (2.4 Fig. 2, 2.13 Fig. 2A, 2.23 Fig. 2B) that fasten it to the arm;
在取下雄触头（图 2 之 2.3，图 2A 之 2.12，图 2B 之 2.22）之前先拧开将其紧固在刀臂上的螺钉（图 2 之 2.4，图 2A 之 2.13，图 2B 之 2.23）；
- clean the contact surfaces of the male and of the new contact and apply on them a layer of antioxidant paste;
清洗雄触头的接触表面及新触头的接触表面并在它们上面涂一层抗氧化糊剂；
- install the new contact (2.3 Fig. 2, 2.12 Fig. 2A, 2.22 Fig. 2B) and fasten it with the screws (2.4 Fig. 2, 2.13 Fig. 2A, 2.23 Fig. 2B) removed previously.

安装新的触头（图 2 之 2.3，图 2A 之 2.12，图 2B 之 2.22）并用先前取下的螺钉（图 2 之 2.4，图 2A 之 2.13，图 2B 之 2.23）将其固定。

9.2.2 Female mobile contacts (Fig. 2, 2A, 2B)

雌动触头（图 2, 2A, 2B）

To replace the female mobile contact (2.5 Fig. 2, 2.14 Fig. 2A, 2.24 Fig. 2B), proceed as follows:

要更换雌动触头（图 2 之 2.5，图 2A 之 2.14，图 2B 之 2.24），可按照如下方法进行：

- remove the female contact (2.5 Fig. 2, 2.14 Fig. 2A, 2.24 Fig. 2B) after unscrewing the screws (2.6 Fig. 2, 2.15 Fig. 2A, 2.25 Fig. 2B) that fasten it to the arm;
在取下雌触头（图 2 之 2.5，图 2A 之 2.14，图 2B 之 2.24）之前先拧开将其紧固在刀臂上的螺钉（图 2 之 2.6，图 2A 之 2.15，图 2B 之 2.25）；
- clean the contact surfaces of the female arm and of the new contact and apply on them a layer of antioxidant paste;
清洗雌触头的接触表面及新触头的接触表面并在它们上面涂一层抗氧化糊剂；
- install the new contact (2.5 Fig. 2, 2.14 Fig. 2A, 2.24 Fig. 2B) and fasten it with the screws (2.6 Fig. 2, 2.15 Fig. 2A, 2.25 Fig. 2B) removed previously.

安装新的触头（图 2 之 2.5，图 2A 之 2.14，图 2B 之 2.24）并用先前取下的螺钉（图 2 之 2.6，图 2A 之 2.15，图 2B 之 2.25）将其固定。

9.2.3 Drive [operating mechanism] (Fig. 7)

驱动机构（图 7）

If the drive needs to be replaced, proceed as follows:

如果驱动机构需要更换，按下述程序进行：

- set the switchgear to the OPEN position;
将开关设备置于“开”位；
- disconnect the flexible conductor from the vertical drive shaft and disconnect all electric connections;
拆除连接于垂直驱动轴上的挠性电缆，拆除所有连接电线；

- uncouple the vertical drive shaft;
分开偶合垂直驱动轴;
- sling the drive and lift it slightly to put the sling in tension;
吊起驱动箱体至绳索绷紧;
- remove the four bolts that fasten the cabinet to the support structure;
取下把箱体固定于支架结构的四个螺栓;
- pull out the drive horizontally and move it to the required place.
水平地拉出驱动机构，并移至要求的地方;

Proceed as instructed in Section 6, to install the new drive.

按第 6 节指示安装新的驱动机构。

9.2.4 *Flexible conductors*

柔性导体

On each pole of the equipment there are:

设备每一个电极:

4 flexible conductors on the live parts (Fig. 2, 2A, 2B).

4 个柔性导体在过流部件上 (图 2, 2A, 2B)。

Replacement is required in the event of breakage or irregular bending of one component.

如果柔性导体断裂或不规则弯曲，则需要更换。

To replace the flexible conductors, loosen the screws that fasten them to the electrically connected parts.

更换时，要松开将其固定到连通部件的螺钉。

Clean carefully and install the new flexible conductors.

仔细清洁并安装好新的柔性导体。

9.2.5 *Ball joints of the adjustable thrust linkages*

可调节推力连杆的球铰

Check that the ball joints move freely, that they are not slack, and that their surfaces are not corroded.

确保球铰可自由移动，没有松弛，各表面没有遭到腐蚀。

Take into account that, after replacement, any adjustment carried out in our factory is lost.

如果更换，要考虑到原先工厂调整出来的状态可能已不复存在。

Before replacing the ball joints, measure carefully the distance between the centerlines of the two joints and, after the replacement, adjust the length of the linkages to reinstate the original distance between the axes of the two joints.

更换球铰前，小心测量两铰的轴线距离。更换后，调节连杆的长度，以回复两铰轴线间的原始距离。

10. LIST OF TOOLS

工具列表

Ordinary tools should be adequate for the installation and maintenance of these disconnectors such as box wrenches, open-end wrenches, socket wrenches, torque wrenches with torque up to 200 Nm, screwdrivers, pliers, hammers, spirit level, mason's rule, tape measure, etc.

安装和维护隔离开关要有足够的常用工具，如套筒扳手，开口扳手，管钳扳手，200 Nm 以下的扭矩扳手，螺丝刀，老虎钳，锤子，水平仪，直尺，皮尺等。

To lift the units, a truck crane equipped with adequate ropes (slings) with thimbles as shown in Fig. A is required.

吊起单元时，要求有卡车起重机，配足够带套环的绳索，如图 A 所示。

No special tools are therefore required.

无需特殊工具。

11. SPARE PARTS

备品备件

Send any order for spare parts to:

备件订单发往：

AREVA T&D SpA

Via Meucci, 22

30020 Noventa di Piave – VE –

ITALY – 意大利

(Fax. 传真: 0421-65254 - Tel. 电话: 0421-309511)

State:

载明：

- the number of this manual;
本手册号
- the number of the figure and the number of the item in the figure;
图号和部件在图中的编号；
- the customer's order number, the type of disconnector and its serial number.
用户订单号，隔离开关的类型及其系列号。

NOTE: When replacing live parts through which current will flow, the surfaces that are permanently in contact must be treated as follows (e.g. the contact surface between the terminal pad and the fixed-contact support):

注：在更换电流将从中通过的过流部件时，永久接触的表面（比如接线柱衬垫与静触头支承间的接触面）必须按下述步骤处理

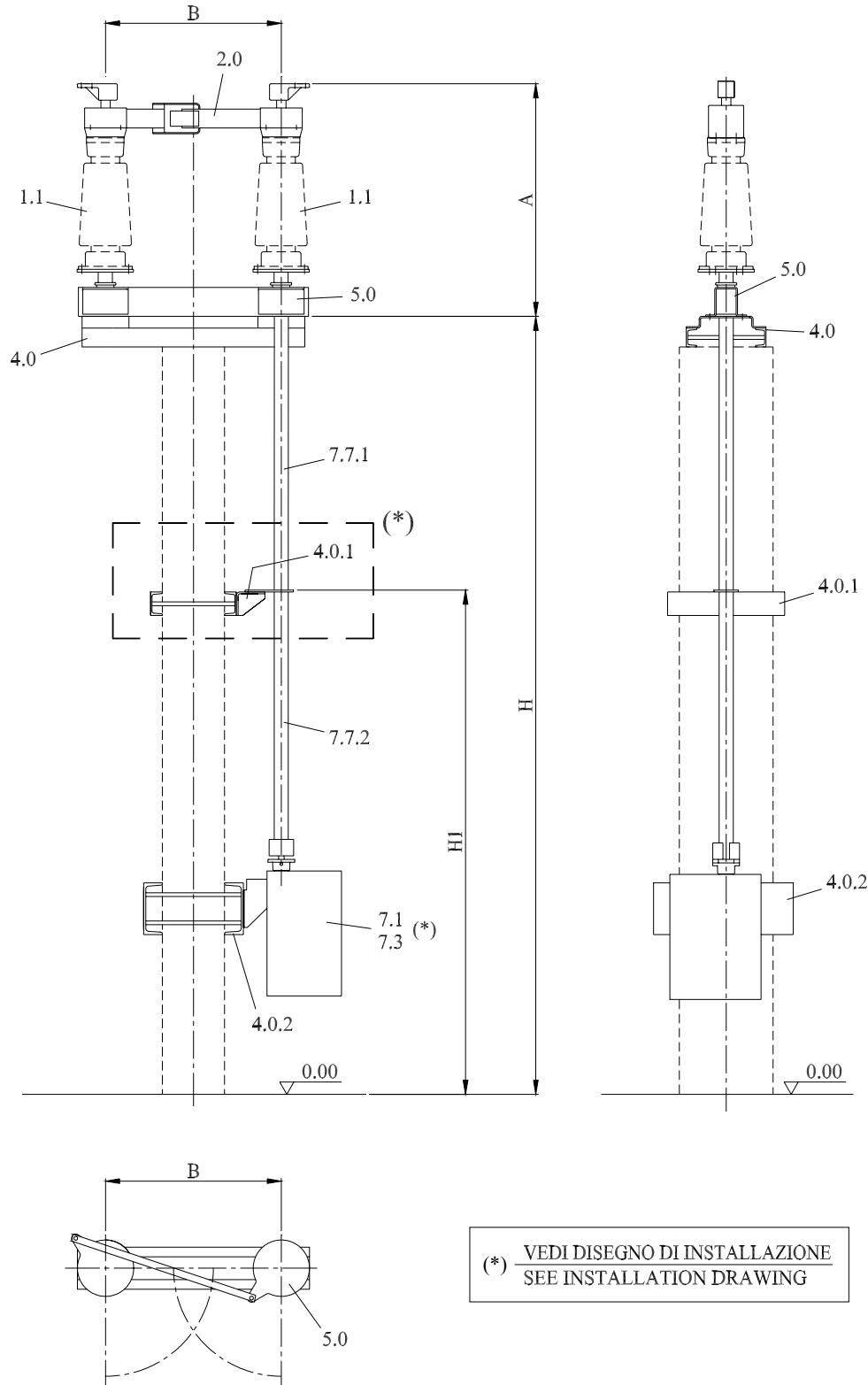
- wipe off any trace of grease from the contact surfaces with trichloroethylene or other non-abrasive solvent. If the surfaces are oxidized, clean them up with a steel brush or fine emery paper;
用三氯乙烯或其他非磨蚀性溶剂擦净接触表面任何脂迹，如果表面被氧化，则用钢丝刷或细砂纸擦净。

- cover immediately with antioxidant compound;
然后立即用抗氧化剂涂覆。
- connect the surfaces as soon as possible;
尽快连接这些表面。

Surfaces through which wiping-contact current flows (e.g. mobile contact blades) must be covered with a thin layer of grease NYOGEL 760G (to be restored at each inspection).

磨擦接触电流通过的表面（如动触头的触片）必须覆盖一层 NYOGEL 760G 薄脂（每次检查时复涂）。

FIG. 1: ASSEMBLY OF THE SINGLE-POLE S2DA DISCONNECTOR
图1: S2DA 单极隔离开关的组件



SEE INSTALLATION DRAWING=见安装图

NOTE: Concerning the dimensions A, B, H, H₁, X, see the specific DIN-... drawing.
注意: 关于A, B, H, H₁, X的尺寸, 请见具体的DIN-...图纸。

Key of the assembly of the S2DA single-pole disconnector (Fig. 1)

S2DA 单极隔离开关的组件图例（图 1）

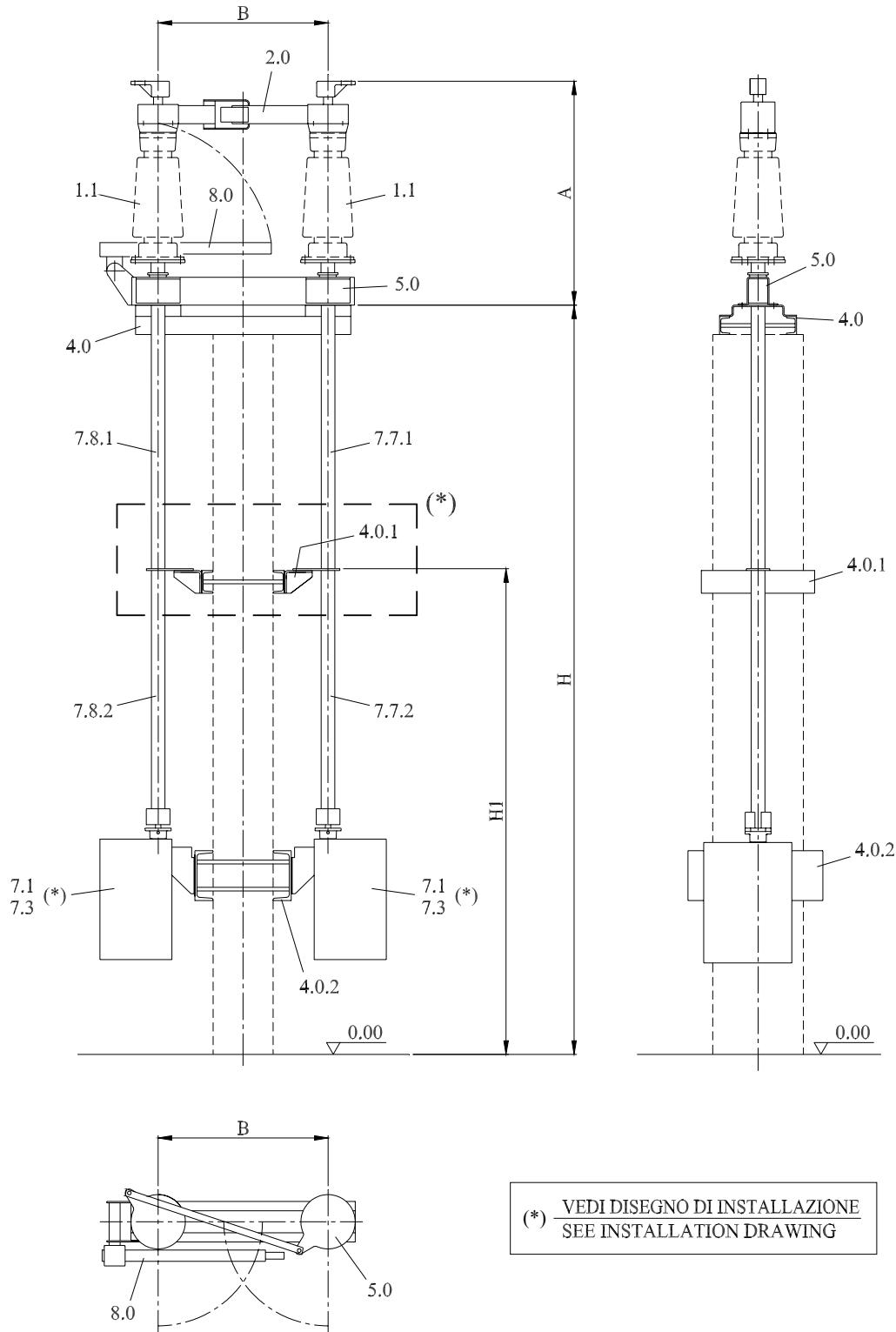
- 1.1 INSULATOR — 绝缘子
- 2.0 LIVE PART — 过流部件
- 5.0 LOWER BASE — 下底座
- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
 - 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
 - 4.0.2 DRIVE SUPPORT — 驱动支架
- 7.1 MOTOR DRIVE — 电机驱动机构
- 7.3 MANUAL DRIVE — 手动驱动机构
 - 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
 - 7.7.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直转动轴的下半部分

(*) only for very high installations (see specific installation drawings)

(*)只使用于非常高的装置（见专门安装图纸）

FIG. 1A: ASSEMBLY OF THE SINGLE-POLE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE MALE CONTACT

图 1A: 在雄触头侧面装有接地开关的单极 S2DAT 隔离开关组件



SEE INSTALLATION DRAWING=见安装图

NOTE: Concerning the dimensions A, B, H, H₁, X, see the specific DIN-... drawing.
注意：关于 A, B, H, H₁, X 的尺寸，请见具体的 DIN-... 图纸。

Key of the assembly of the single-pole S2DAT disconnector with earthing switch on the side of the male contact

在雄触头侧面有接地开关的单极 S2DAT 隔离开关的组件图例

(Fig. 1A)

(图 1A)

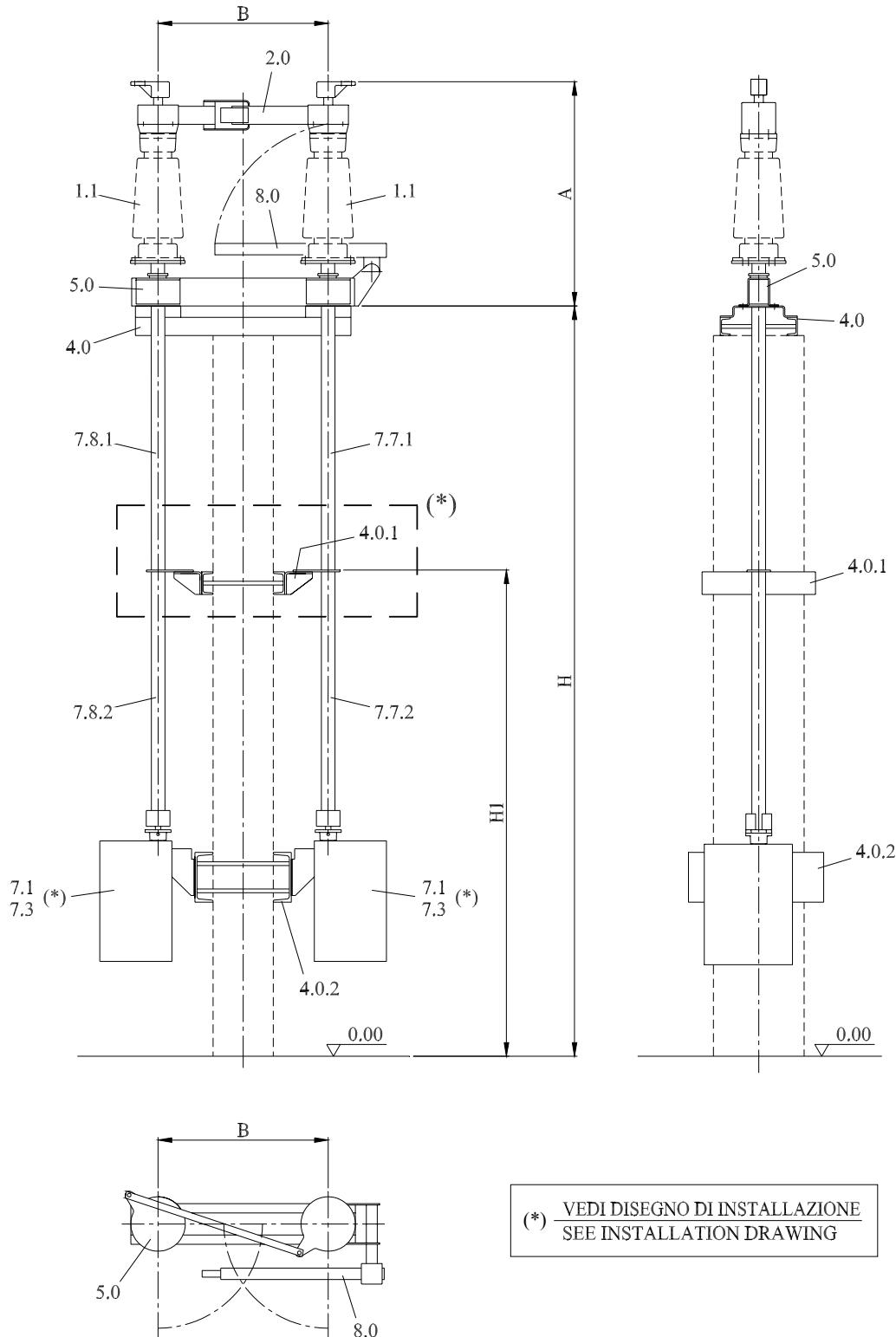
- 1.1 INSULATOR — 绝缘子
- 2.0 LIVE PART — 过流部件
- 5.0 LOWER BASE — 下底座
- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
 - 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
 - 4.0.2 DRIVE SUPPORT — 驱动支架
- 7.1 MOTOR DRIVE — 电机驱动机构
- 7.3 MANUAL DRIVE — 手动驱动机构
- 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
- 7.7.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直转动轴的下半部分
- 7.8.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的上半部分
- 7.8.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的下半部分
- 8.0 EARTHING SWITCH — 接地开关

() only for very high installations (see specific installation drawings)*

()只使用于非常高的装置 (见专门安装图纸)*

FIG. 1B: ASSEMBLY OF THE SINGLE-POLE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE FEMALE CONTACT

图 1B: 在雌触头侧面有接地开关的单极 S2DAT 隔离开关的组件



SEE INSTALLATION DRAWING=见安装图

NOTE: Concerning the dimensions A, B, H, H₁, X, see the specific DIN-... drawing.
注意：关于 A, B, H, H₁, X 的尺寸，请见具体的 DIN-... 图纸。

Key of the assembly of the single-pole S2DAT disconnector with earthing switch on the side of the female contact

在雌触头侧面有接地开关的单极 S2DAT 隔离开关的组件图例

(Fig. 1B)

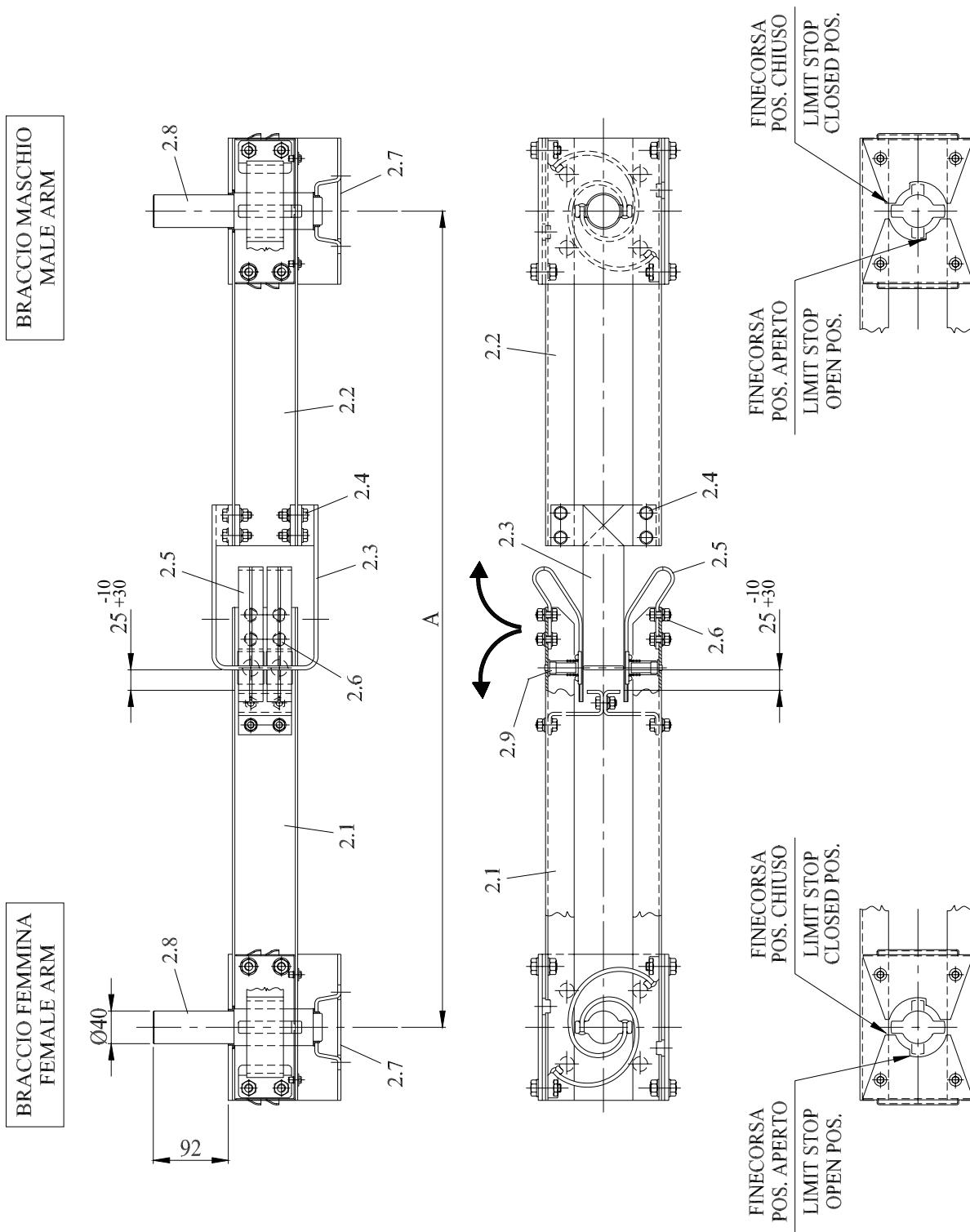
(图 1B)

- 1.1 INSULATOR — 绝缘子
- 2.0 LIVE PART — 过流部件
- 5.0 LOWER BASE — 下底座
- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
 - 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
 - 4.0.2 DRIVE SUPPORT — 驱动支架
- 7.1 MOTOR DRIVE — 电机驱动机构
- 7.3 MANUAL DRIVE — 手动驱动机构
 - 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
 - 7.7.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直转动轴的下半部分
- 7.8.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的上半部分
- 7.8.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的下半部分
- 8.0 EARTHING SWITCH — 接地开关

(*) only for very high installations (see specific installation drawings)

(*)只使用于非常高的装置 (见专门安装图纸)

FIG. 2: LIVE PART, 1250 A
图2: 1250A 过流部件



FEMALE ARM=雌刀臂

MALE ARM=雄刀臂

LIMIT STOP, CLOSED POSITION=限位档块 - 合闸位置

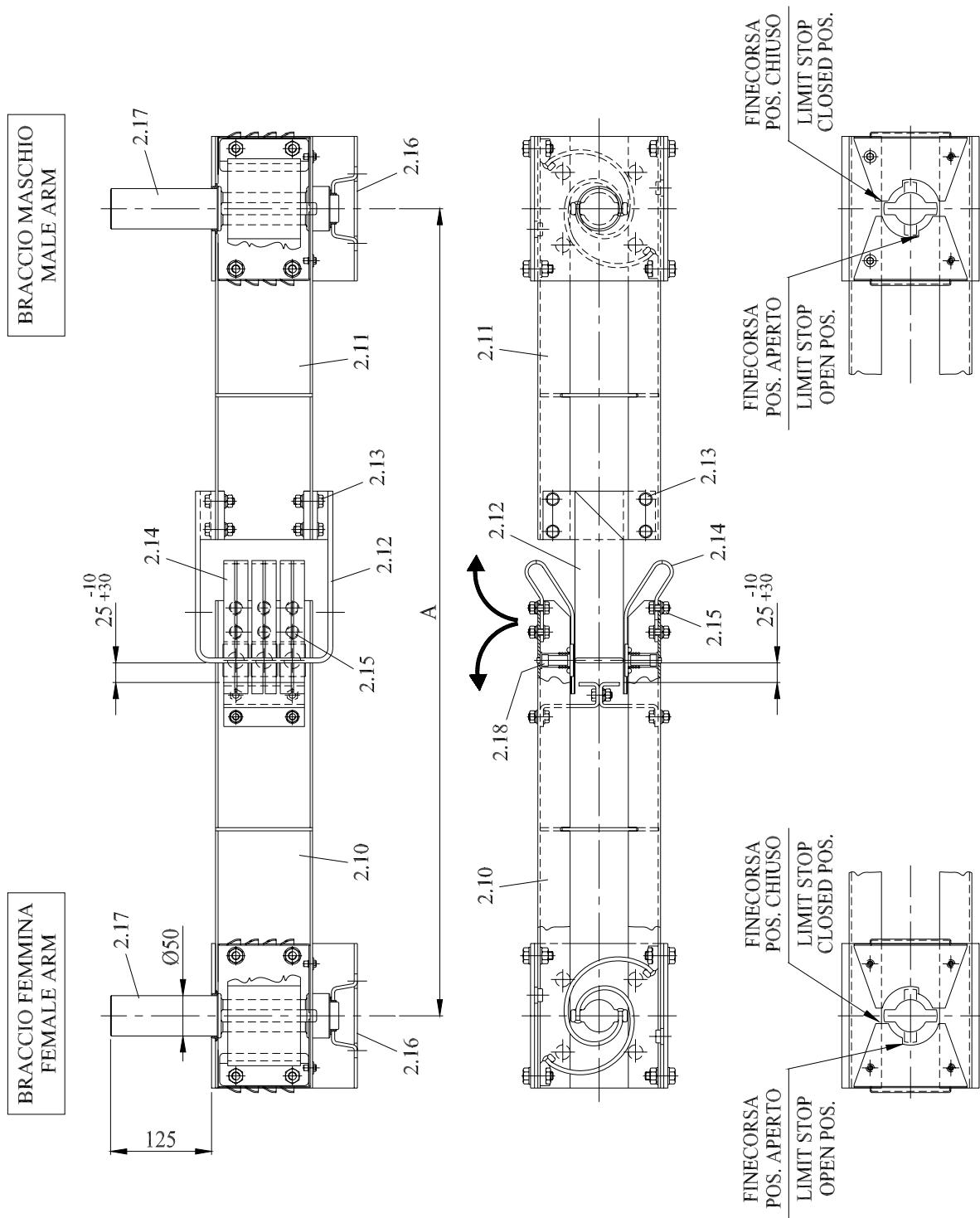
LIMIT STOP, OPEN POSITION=限位档块 - 开闸位置

Key of the live part 1250 A (Fig. 2)

1250A 过流部件图例 (图 2)

- 2.1 LIVE PART (FEMALE ARM) — 过流部件 (雌刀臂)
- 2.2 LIVE PART (MALE ARM) — 过流部件 (雄刀臂)
- 2.3 MALE CONTACT — 雄触头
- 2.4 SCREWS FASTENING THE MALE CONTACT — 紧固雄触头的螺钉
- 2.5 FEMALE CONTACT — 静触头
- 2.6 SCREWS FASTENING THE FEMALE CONTACT — 紧固雌触头的螺钉
- 2.7 INSULATOR SUPPORT AND FASTENING AREA — 绝缘子支架和固定区域
- 2.8 TERMINAL CONNECTION SHANK — 端子连接头
- 2.9 PRESSURE SPRINGS — 压力弹簧

FIG. 2A: LIVE PART, 1600-2000 A
图 2A: 1600-2000A 过流部件



FEMALE ARM=雌刀臂

MALE ARM=雄刀臂

LIMIT STOP, CLOSED POSITION= — 限位档块 - 合闸位置

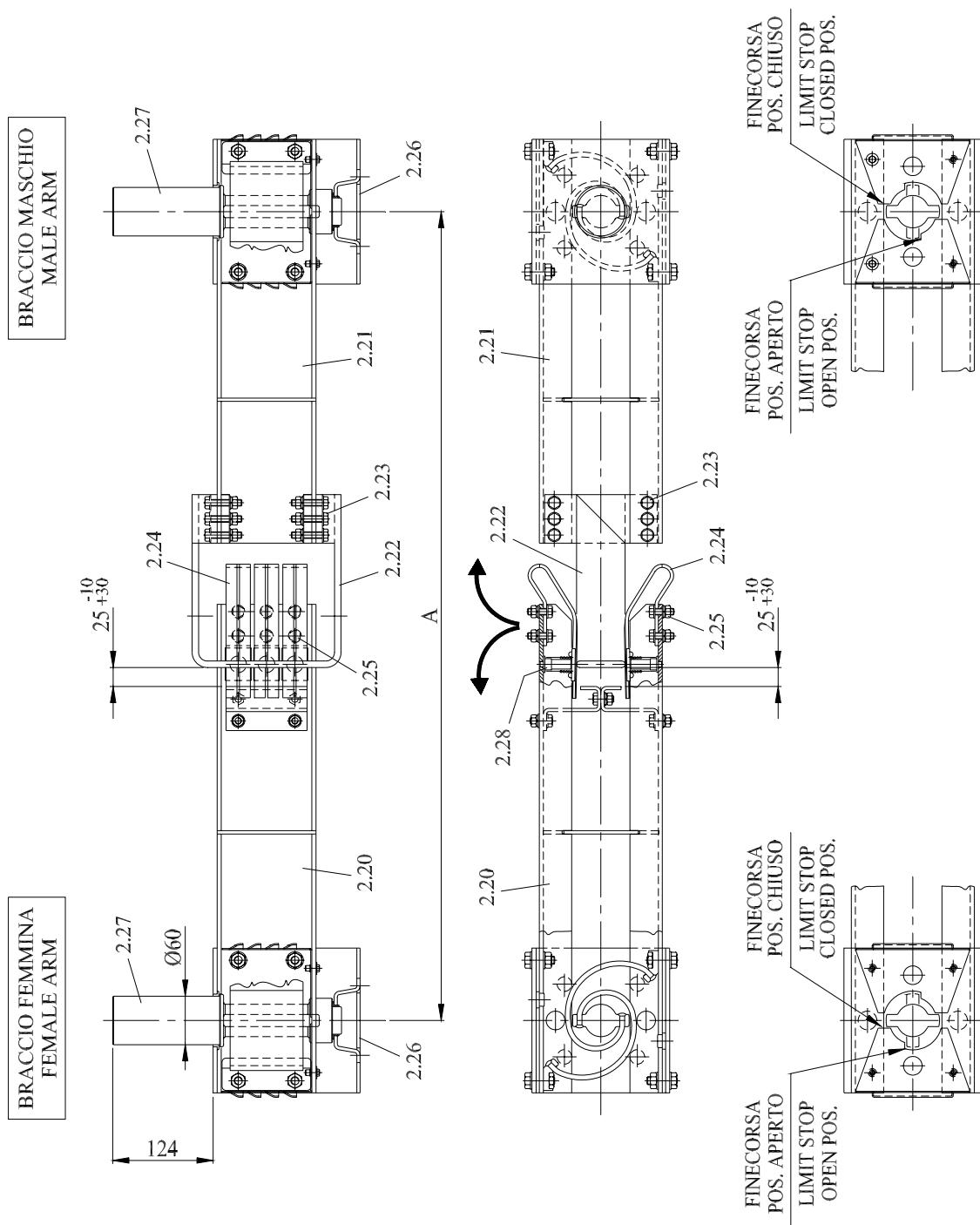
LIMIT STOP, OPEN POSITION= — 限位档块 - 开闸位置

Key of the live part 1600-2000 A (Fig. 2A)

1600-2000A 过流部件图例 (图 2A)

- 2.10 LIVE PART (FEMALE ARM) — 过流部件 (雌刀臂)
- 2.11 LIVE PART (MALE ARM) — 过流部件 (雄刀臂)
- 2.12 MALE CONTACT — 雄触头
- 2.13 SCREWS FASTENING THE MALE CONTACT — 紧固雄触头的螺钉
- 2.14 FEMALE CONTACT — 静触头
- 2.15 SCREWS FASTENING THE FEMALE CONTACT — 紧固雌触头的螺钉
- 2.16 INSULATOR SUPPORT AND FASTENING AREA — 绝缘子支架和固定区域
- 2.17 TERMINAL CONNECTION SHANK — 端子连接头
- 2.18 PRESSURE SPRINGS — 压力弹簧

FIG. 2B: LIVE PART, 2500 A
图 2B: 2500A 过流部件



FEMALE ARM=雌刀臂

MALE ARM=雄刀臂

LIMIT STOP, CLOSED POSITION= — 限位档块 - 合闸位置

LIMIT STOP, OPEN POSITION= — 限位档块 - 开闸位置

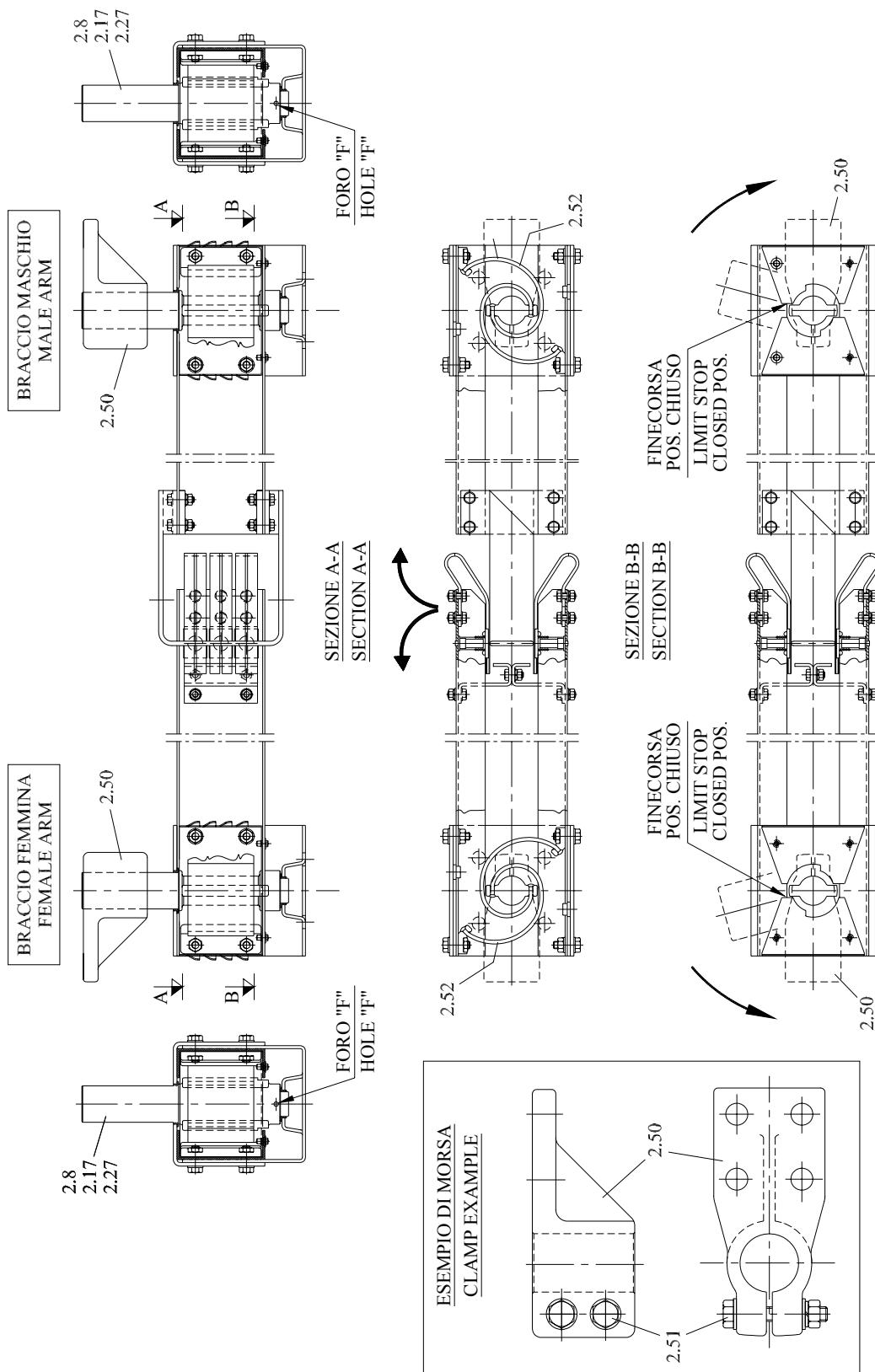
Key of the live part 2500 A (Fig. 2B)

2500A 过流部件图例 (图 2B)

- 2.20 LIVE PART (FEMALE ARM) — 过流部件 (雌刀臂)
- 2.21 LIVE PART (MALE ARM) — 过流部件 (雄刀臂)
- 2.22 MALE CONTACT — 雄触头
- 2.23 SCREWS FASTENING THE MALE CONTACT — 紧固雄触头的螺钉
- 2.24 FEMALE CONTACT — 静触头
- 2.25 SCREWS FASTENING THE FEMALE CONTACT — 紧固雌触头的螺钉
- 2.26 INSULATOR SUPPORT AND FASTENING AREA — 绝缘子支架和固定区域
- 2.27 TERMINAL CONNECTION SHANK — 端子连接头
- 2.28 PRESSURE SPRINGS — 压力弹簧

FIG. 2C: TERMINAL CONNECTION CLAMPS

图 2C: 端子连接夹



FEMALE ARM=雌刀臂

MALE ARM=雄刀臂

LIMIT STOP, CLOSED POSITION= 限位档块 - 合闸位置

LIMIT STOP, OPEN POSITION= 限位档块 - 开闸位置

HOLE =孔

CLAMP EXAMPLE = 卡箍示例

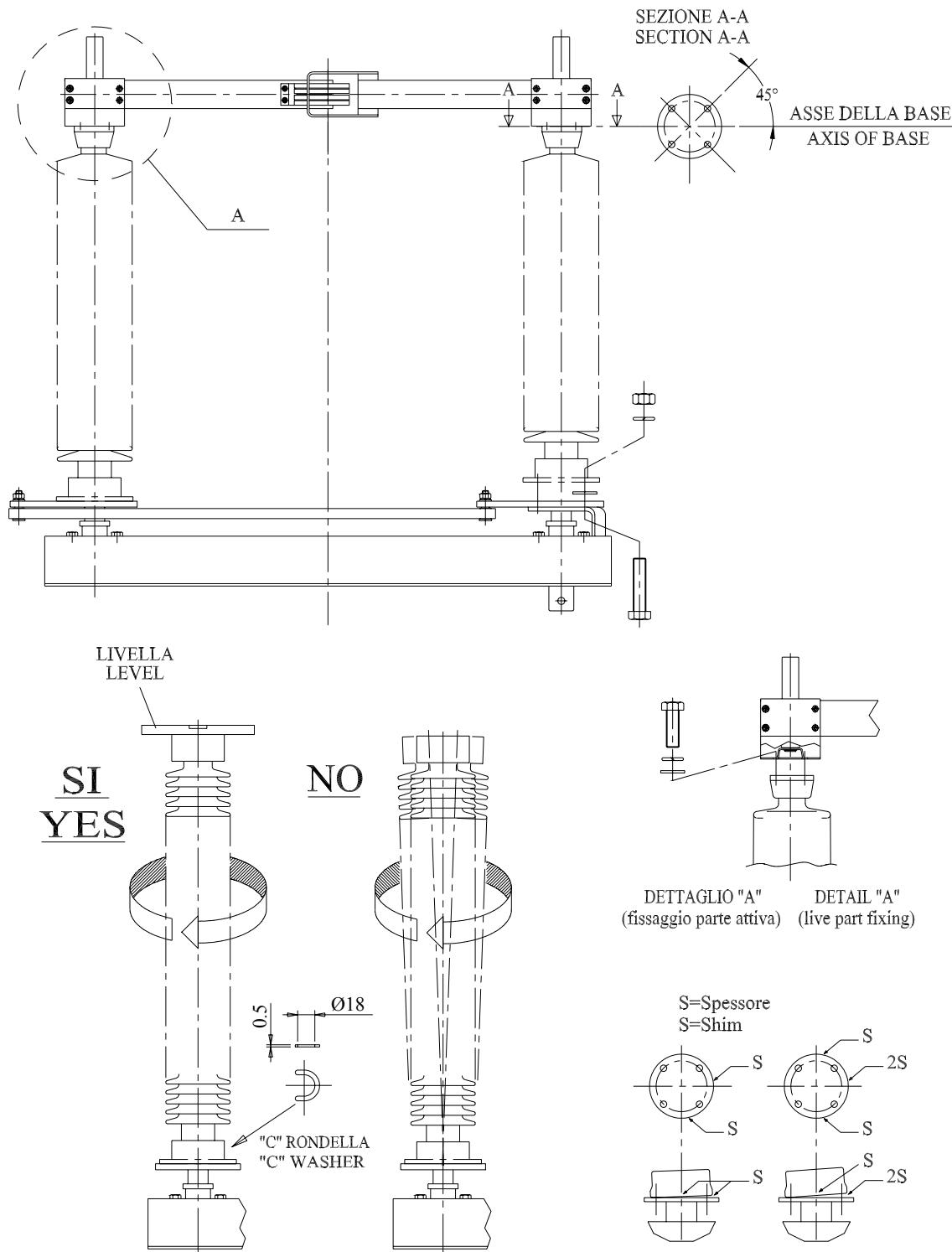
Key of the terminal connection clamps (Fig. 2C)

端子连接卡箍图例 (图 2C)

- 2.8 TERMINAL CONNECTION SHANK - LIVE PART FOR 1250 A — 端子连接头 - 1250A 过流部件
- 2.17 TERMINAL CONNECTION SHANK - LIVE PART FOR 1600-2000 A — 端子连接头 - 1600-2000A 过流部件
- 2.27 TERMINAL CONNECTION SHANK – LIVE PART FOR 2500 A — 端子连接头 – 2500A 过流部件
- 2.50 LINE CONNECTION CLAMP — 线路连接卡箍
- 2.51 CLAMP FASTENING SCREWS — 卡箍紧固螺钉
- 2.52 FLEXIBLE CONDUCTORS — 柔性导体

FIG. 2D: INSTALLATION OF THE ROTARY INSULATORS

图 2D: 旋转绝缘子安装图



LEVEL=水平仪

SECTION = 横截面

AXIS OF THE BASE= 底座轴心

C-WASHER = C 形垫圈

DETAIL A (LIVE PART FIXING) = 详图 A (通流部件固定)

SHIM = 垫片

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

安装和维护说明手册



D0578-02-ZH

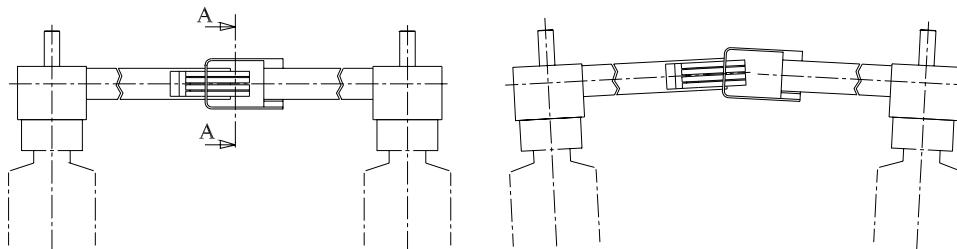
67/100

FIG. 2E: CHECKS ON THE LIVE PART

图 2E: 检查通流部分

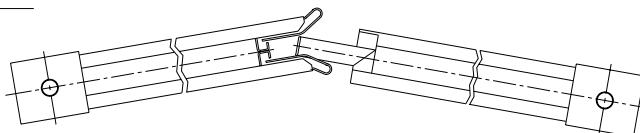
SI
YES

NO

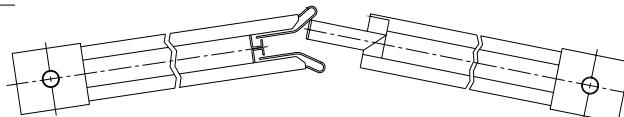


ALLINEAMENTO DEI SEMIBRACCI
ALIGNMENT OF SEMI-ARMS

SI
YES



NO

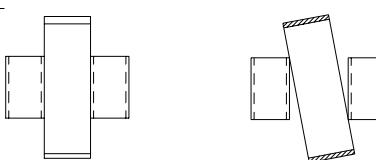


**DURANTE LA MANOVRA DI CHIUSURA NON SI
DEVONO CREARE CARICHI LATERALI**
THERE MUST BE NO SIDE LOAD DURING CLOSING

SI
YES

SEZIONE A-A
SECTION A-A

NO



**IN POSIZIONE DI CHIUSO IL CONTATTO MASCHIO
DEVE ESSERE PARALLELO AL CONTATTO FEMMINA**
**IN THE CLOSED POSITION THE MALE CONTACT
MUST BE PARALLEL TO THE FEMALE CONTACT**

ALIGMENT OF SEMIARMS = 半刀臂的对准

YES = 正确 NO= 错误

THERE MUST BE NO SIDE LOAD DURING CLOSING = 在合闸时决不能有单侧的负荷

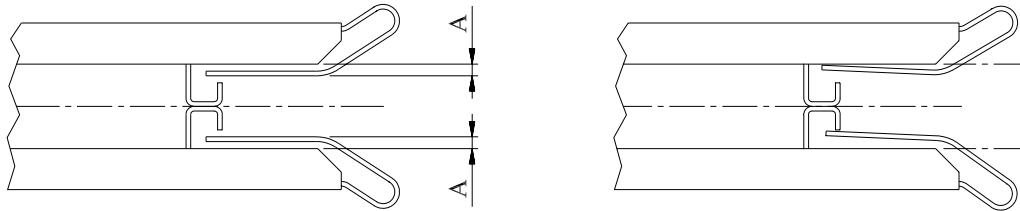
IN THE CLOSED POSITION THE MALE CONTACT MUST BE PARALLEL TO THE FEMALE CONTACT = 在合闸位置时雄触头必须平行于雌触头

FIG. 2F: CHECKS ON THE LIVE PART

图 2F: 检查通流部分

SI
YES

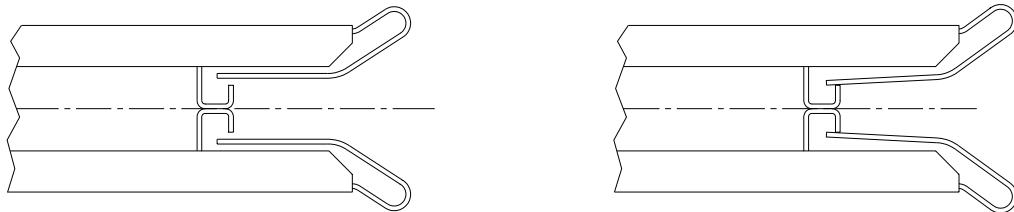
NO



I CONTATTI FEMMINA DEVONO ESSERE PARALLELI AL BRACCIO MOBILE
THE FEMALE CONTACTS MUST BE PARALLEL TO THE MOBILE ARM

SI
YES

NO



LE LAME DEI CONTATTI DEVONO ESSERE PARALLELE, NON DIVERGENTI
THE CONTACTS BLADES MUST BE PARALLEL AND NOT DIVERGENT

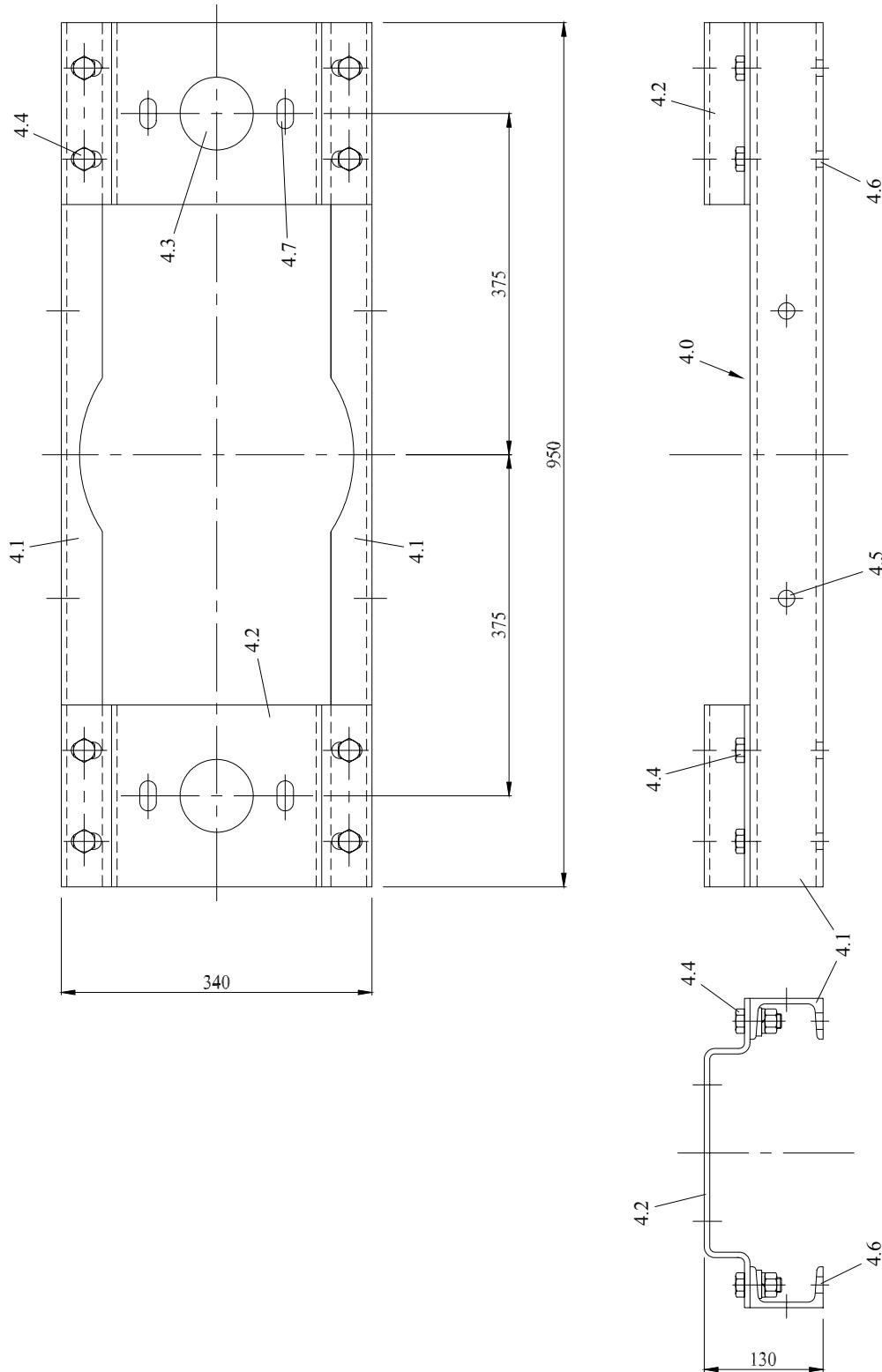
YES= 正确 NO= 错误

THE FEMALE CONTACTS MUST BE PARALLEL TO THE MOBILE ARM = 雌触头必须平行于动刀臂

THE CONTACTS BLADES MUST BE CONVERGENT AND NOT DIVERGENT= 触头触片必须是收拢而不是散开的

FIG. 4: SUPPORT OF THE SINGLE-POLE S2DA / S2DAT DISCONNECTOR

图 4: 单极 S2DA/S2DAT 隔离开关的支架



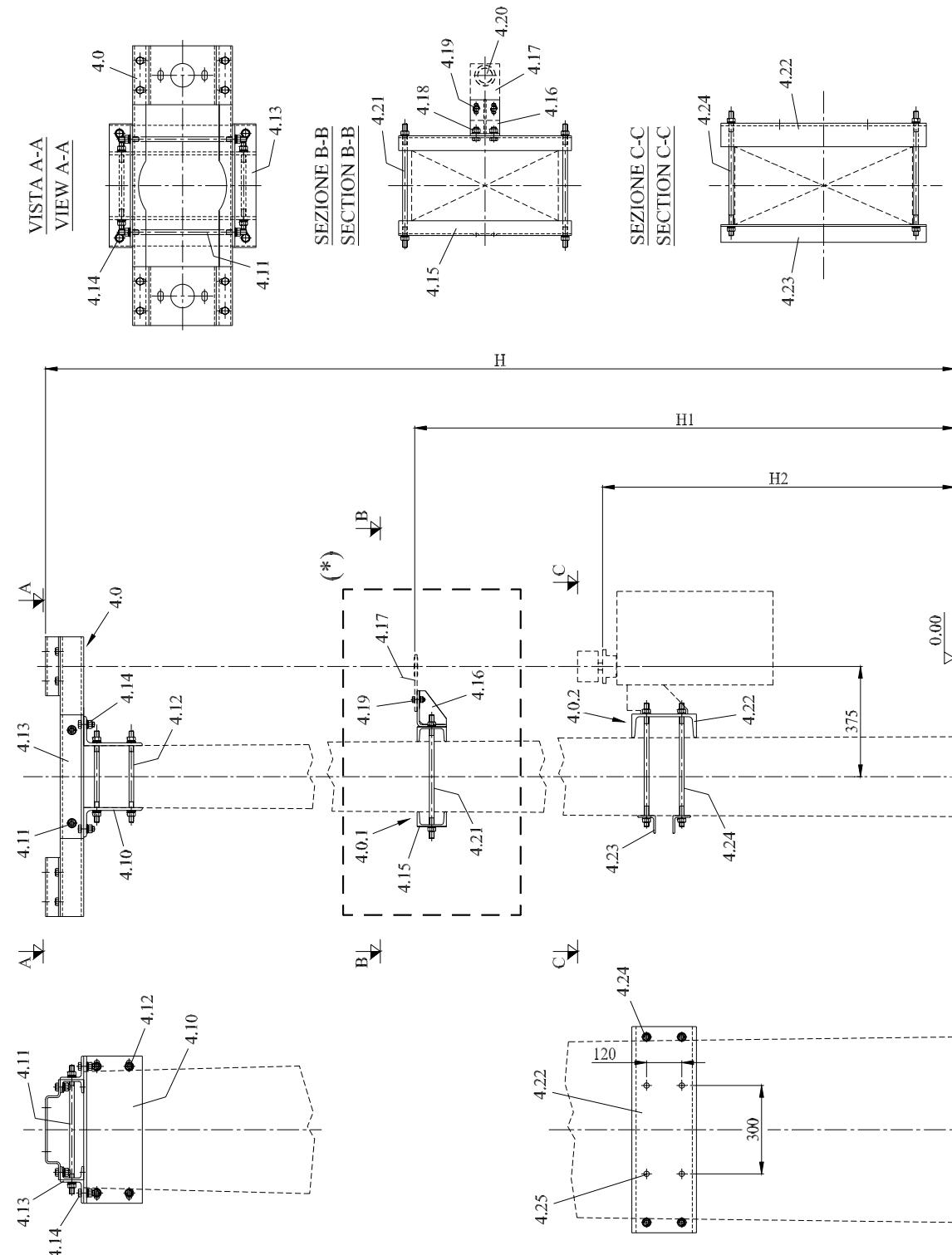
Key of the support of the single-pole S2DA / S2DAT disconnector (Fig. 4)

单极 S2DA/S2DAT 隔离开关的支架图例（图 4）

- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
- 4.1 BEAM — 支持梁
- 4.2 SUPPORT PLATE FOR THE LOWER BASE — 下底座的支撑板
- 4.3 HOLE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴孔
- 4.4 BOLTS FASTENING THE SUPPORT PLATE — 固定支撑板的螺栓
- 4.5 HOLES FOR THE THREADED BARS — 牙条孔
- 4.6 SLOTS FOR FASTENING OF THE SUPPORT OF THE VERTICAL DRIVE SHAFT — 用于紧固垂直驱动轴支架的槽口
- 4.7 SLOTS FOR FASTENING OF THE LOWER BASE — 用于紧固下底座的槽口

**FIG. 4A: SUPPORT STRUCTURE FOR THE SINGLE-POLE S2DA DISCONNECTOR –
INSTALLATION ON RECTANGULAR-SECTION REINFORCED-CONCRETE
PILLAR**

图 4A: 单极 S2DA 隔离开关的支架结构 - 安装在矩形部分的钢筋混凝土支柱上



VIEW=图

SECTION=横截面

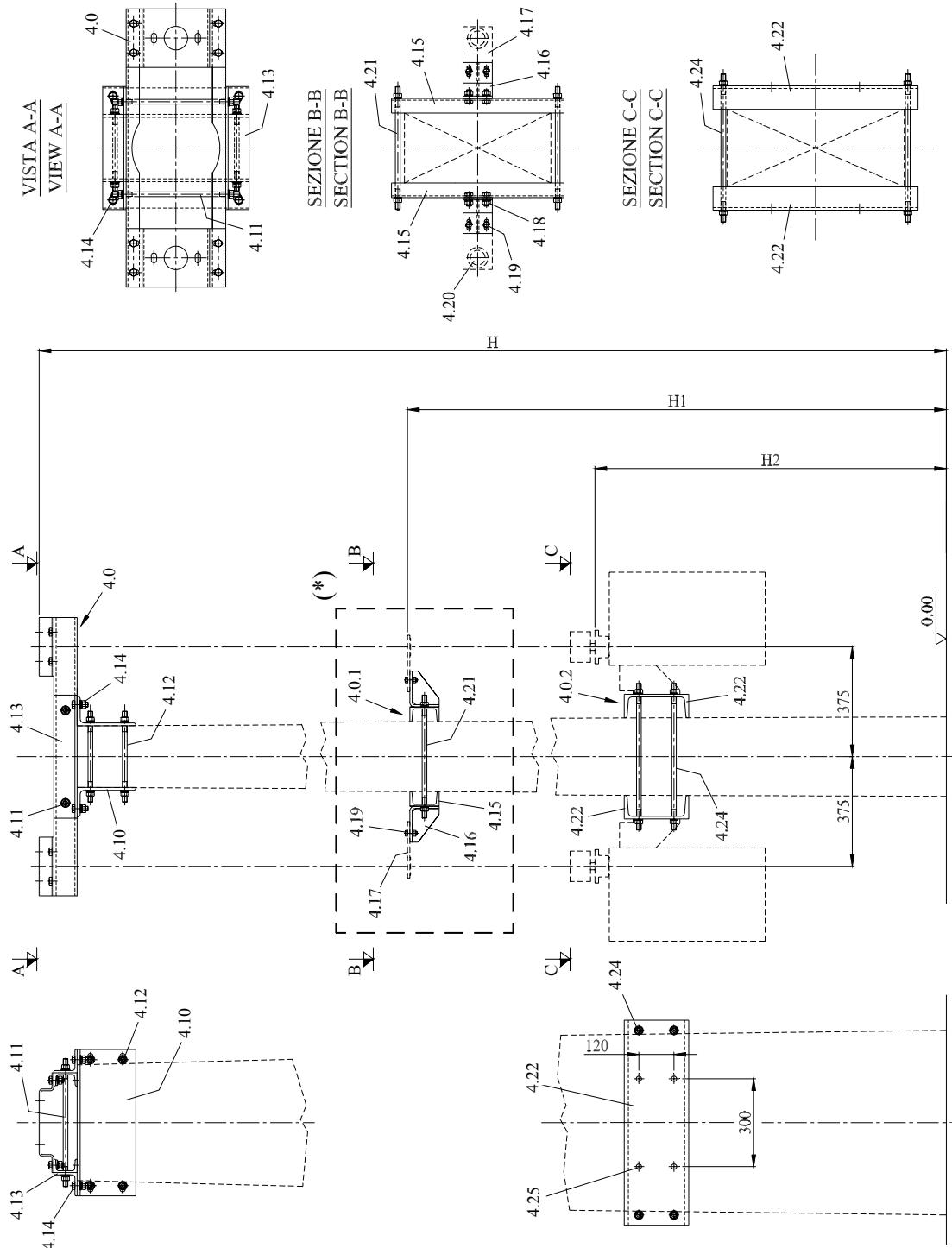
Key of the support structure for the single-pole S2DA disconnector – installation on rectangular-section reinforced-concrete pillar (Fig. 4A)**单极 S2DA 隔离开关的支架结构 - 安装在矩形部分的钢筋混凝土支柱上图例（图 4A）**

- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
- 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
- 4.0.2 DRIVE SUPPORT — 驱动支架
- 4.10 SUPPORT BRACKET FOR THE DISCONNECTOR SUPPORT — 隔离开关支架的支架托架
- 4.11 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的牙条，螺母及开口垫圈
- 4.12 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
- 4.13 ANGLE BAR FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的角钢
- 4.14 BOLTS FASTENING THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的螺栓
- 4.15 SUPPORT BRACKET FOR THE GUIDE PLATE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板的支架托架
- 4.16 SUPPORT FOR THE GUIDE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导轨的支架
- 4.17 GUIDE PLATE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板
- 4.18 FASTENING BOLTS FOR THE SUPPORT OF THE GUIDE — 导轨支架的紧固螺栓
- 4.19 BOLTS FOR FASTENING AND ADJUSTMENT OF THE GUIDE PLATE — 用于紧固和调整导板的螺栓
- 4.20 BUSHING OF THE INTERMEDIATE GUIDE — 中间导轨套管
- 4.21 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS OF THE GUIDE — 用于紧固导轨托架的牙条，螺母及开口垫圈
- 4.22 DRIVE SUPPORT BRACKET — 操作机构支架托架
- 4.23 DRIVE FASTENING BRACKET — 操作机构紧固托架
- 4.24 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DRIVE BRACKETS — 用于紧固操作机构托架的牙条，螺母及开口垫圈
- 4.25 SLOTS FOR FASTENING OF THE DRIVE — 用于紧固操作机构的槽口

(*) only for very high installations (see specific installation drawings)**(*)只使用于非常高的装置 (见专门安装图纸)**

**FIG. 4B: SUPPORT STRUCTURE FOR THE SINGLE-POLE S2DAT DISCONNECTOR
-INSTALLATION ON A RECTANGULAR-SECTION REINFORCED-
CONCRETE PILLAR**

图 4B: 单极 S2DAT 隔离开关的支架结构 - 安装在矩形部分的钢筋混凝土支柱上



VIEW=图

SECTION=横截面

Key of the support structure for the single-pole S2DAT disconnector – installation on a rectangular-section reinforced-concrete pillar (Fig. 4B)

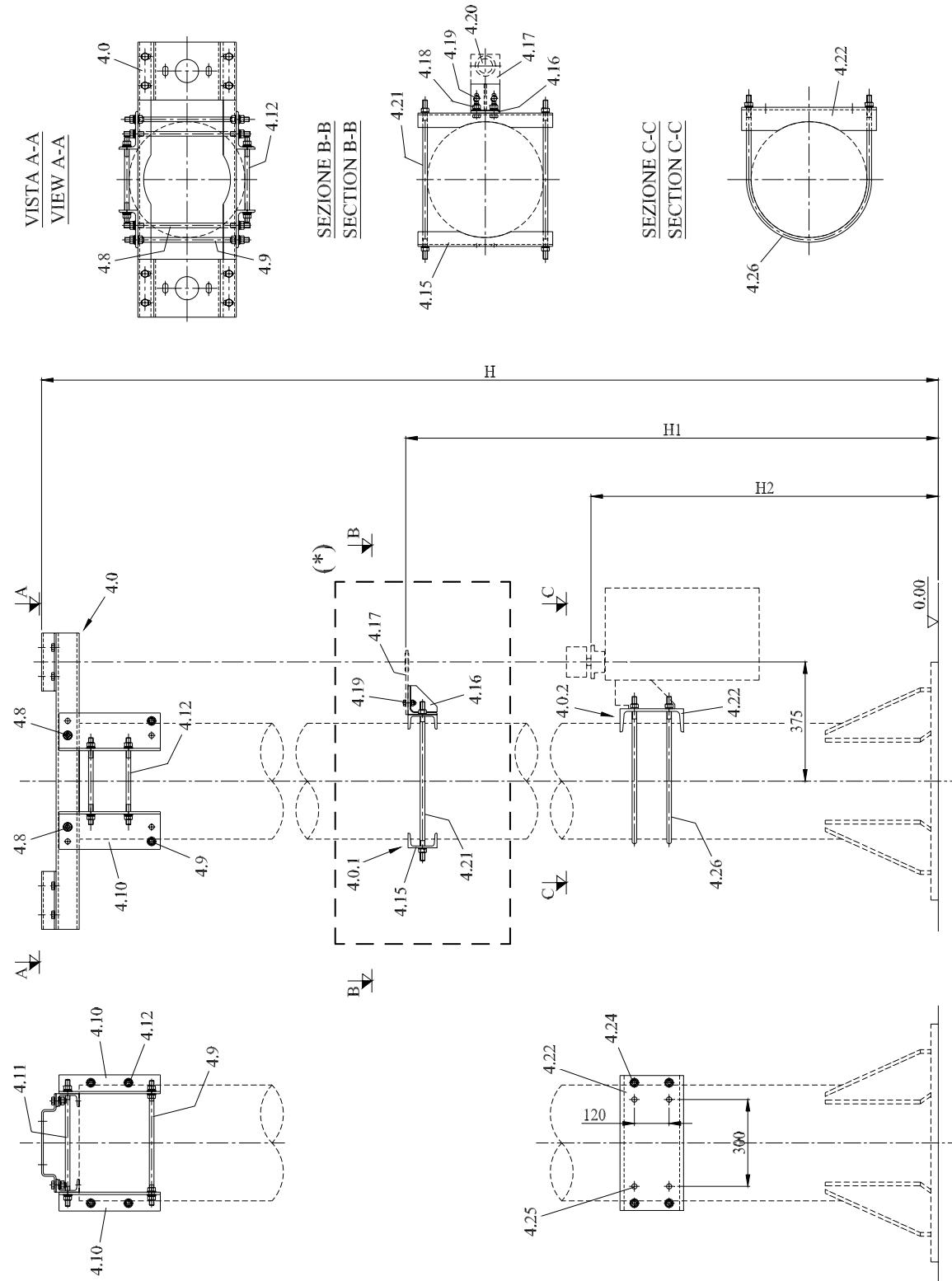
安装在矩形部分钢筋混凝土支柱上的单极 S2DAT 隔离开关的支架结构的图例（图 4B）

- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
- 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
- 4.0.2 DRIVE SUPPORT — 驱动支架
- 4.10 SUPPORT BRACKET FOR THE DISCONNECTOR SUPPORT — 隔离开关支架的支架托架
- 4.11 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的牙条，螺母及开口垫圈
- 4.12 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
- 4.13 ANGLE BAR FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的角钢
- 4.14 BOLTS FASTENING THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的螺栓
- 4.15 SUPPORT BRACKET FOR THE GUIDE PLATE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板的支架托架
- 4.16 SUPPORT FOR THE GUIDE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导轨的支架
- 4.17 GUIDE PLATE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板
- 4.18 FASTENING BOLTS FOR THE SUPPORT OF THE GUIDE — 导轨支架的紧固螺栓
- 4.19 BOLTS FOR FASTENING AND ADJUSTMENT OF THE GUIDE PLATE — 用于紧固和调整导板的螺栓
- 4.20 BUSHING OF THE INTERMEDIATE GUIDE — 中间导轨套管
- 4.21 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS OF THE GUIDE — 用于紧固导轨托架的牙条，螺母及开口垫圈
- 4.22 DRIVE SUPPORT BRACKET — 操作机构支架托架
- 4.24 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DRIVE BRACKETS — 用于紧固操作机构托架的牙条，螺母及开口垫圈
- 4.25 SLOTS FOR FASTENING OF THE DRIVE — 用于紧固操作机构的槽口

(*) only for very high installations (see specific installation drawings)

(*)只使用于非常高的装置（见专门安装图纸）

**FIG. 4C: SUPPORT STRUCTURE FOR THE SINGLE-POLE S2DA DISCONNECTOR –
INSTALLATION ON ROUND-SECTION REINFORCED-CONCRETE PILLAR**
图 4C: 安装在圆形部分钢筋混凝土支柱上的单极 S2DA 隔离开关的支架结构



VIEW=图

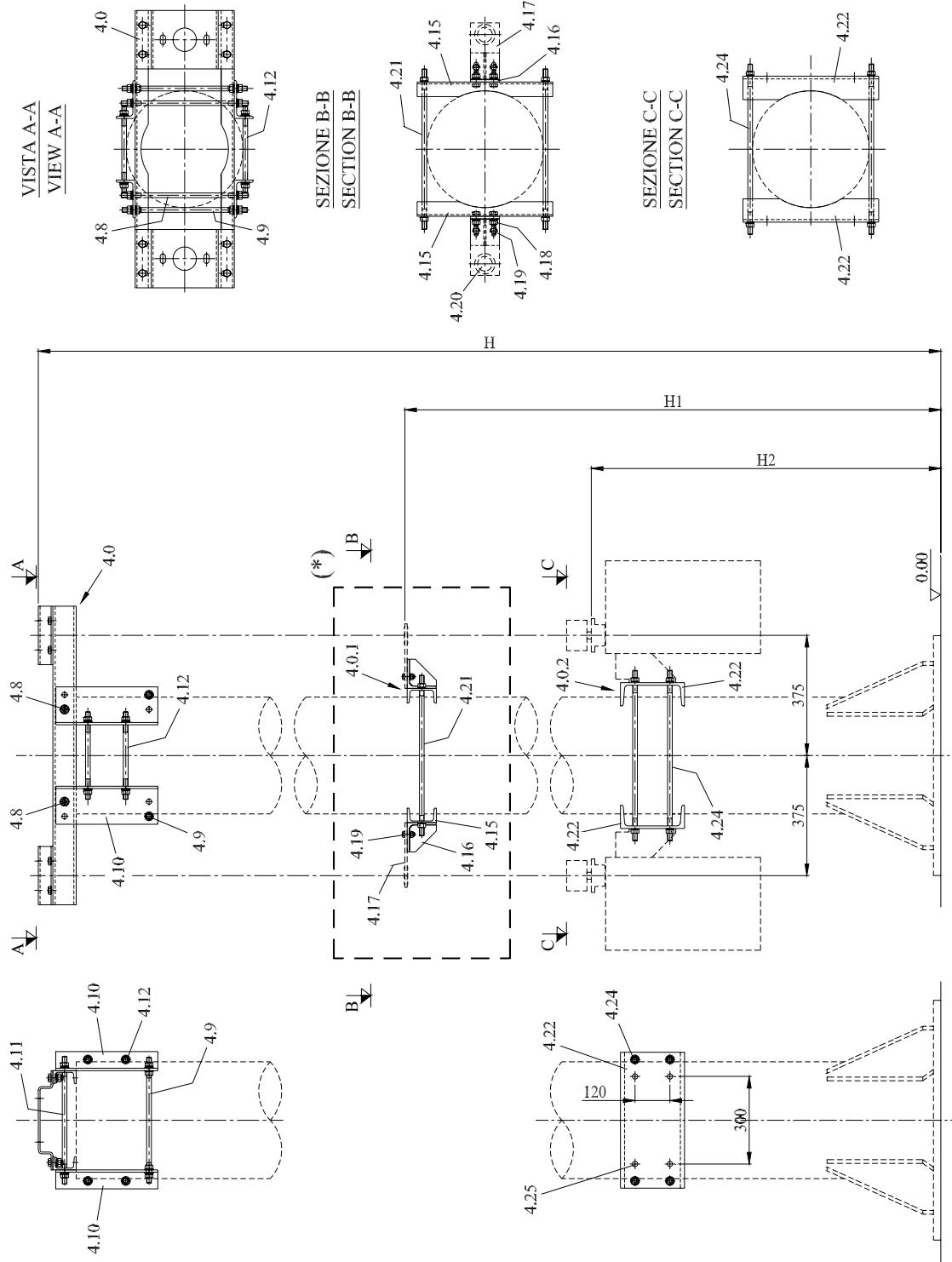
SECTION=横截面

Key of the support structure for the single-pole S2DA disconnector –installation on round-section reinforced-concrete pillar (Fig. 4C)

安装在圆形部分钢筋混凝土支柱上的单极 S2DA 隔离开关的支架结构图例（图 4C）

- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
 - 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
 - 4.0.2 DRIVE SUPPORT — 驱动支架
 - 4.8 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的牙条，螺母及开口垫圈
 - 4.9 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
 - 4.10 SUPPORT BRACKET FOR THE DISCONNECTOR SUPPORT — 隔离开关支架的支架托架
 - 4.12 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
 - 4.15 SUPPORT BRACKET FOR THE GUIDE PLATE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板的支架托架
 - 4.16 SUPPORT FOR THE GUIDE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导轨的支架
 - 4.17 GUIDE PLATE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板
 - 4.18 FASTENING BOLTS FOR THE SUPPORT OF THE GUIDE — 导轨支架的紧固螺栓
 - 4.19 BOLTS FOR FASTENING AND ADJUSTMENT OF THE GUIDE PLATE — 用于紧固和调整导板的螺栓
 - 4.20 BUSHING OF THE INTERMEDIATE GUIDE — 中间导轨套管
 - 4.21 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS OF THE GUIDE — 用于紧固导轨托架的牙条，螺母及开口垫圈
 - 4.22 DRIVE SUPPORT BRACKET — 操作机构支架托架
 - 4.25 SLOTS FOR FASTENING OF THE DRIVE — 用于紧固操作机构的槽口
 - 4.26 U-BOLTS, NUTS AND WASHERS FOR FASTENING OF THE BRACKET — 用于紧固托架的 U-形螺栓，螺母及垫圈
- (*) only for very high installations (see specific installation drawings)
(*)只使用于非常高的装置（见专门安装图纸）

FIG. 4D: SUPPORT STRUCTURE FOR THE SINGLE-POLE S2DAT DISCONNECTOR – INSTALLATION ON ROUND-SECTION REINFORCED-CONCRETE PILLAR
图 4D: 安装在圆形部分钢筋混凝土支柱上的单极 S2DAT 隔离开关的支架结构



VIEW=图

SECTION=横截面

OPENS = 分闸

CLOSES =合闸

Key of the support structure for the single-pole S2DAT disconnector – installation on round-section reinforced-concrete pillar (Fig. 4D)

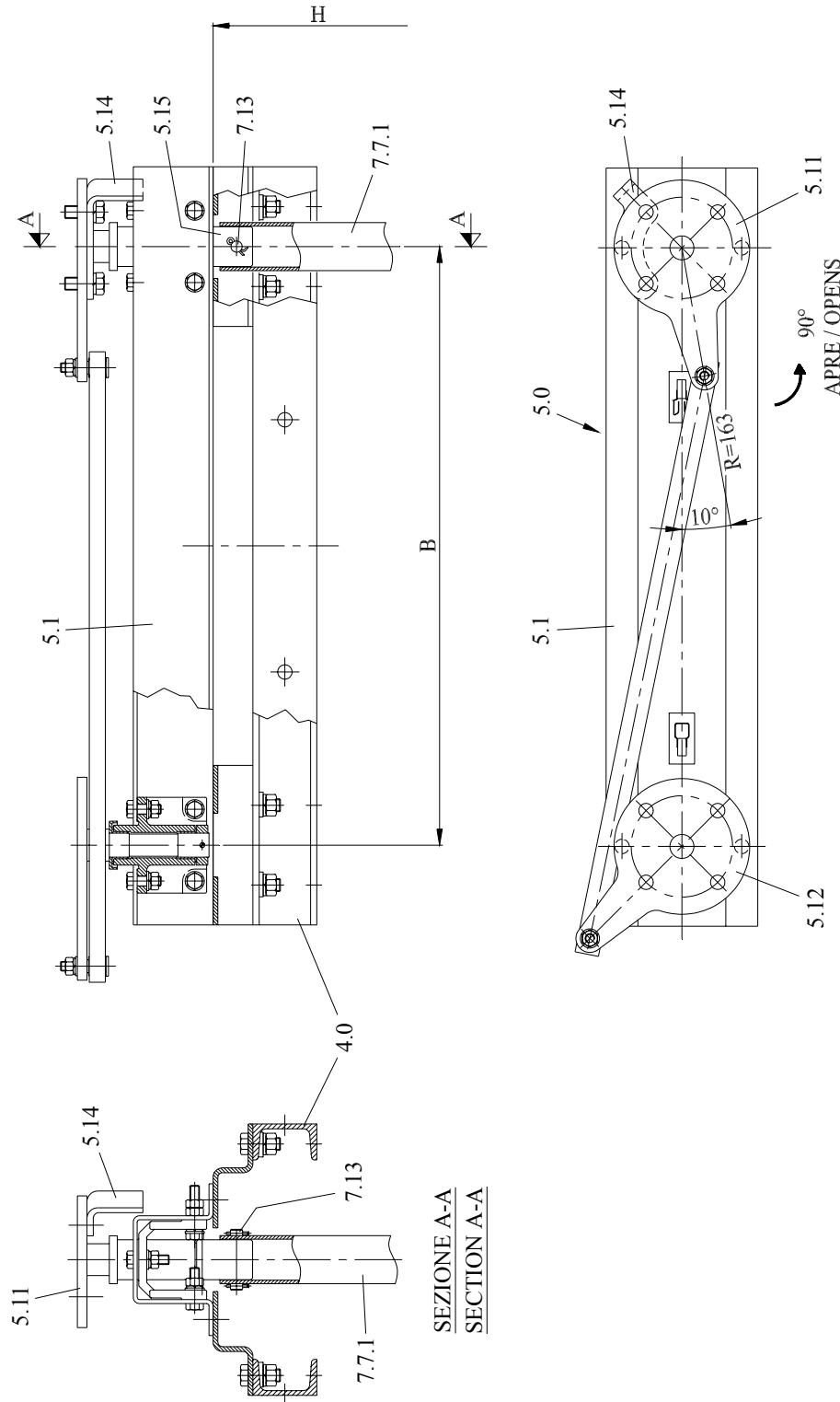
安装在圆形部分钢筋混凝土支柱上的单极 S2DAT 隔离开关的支架结构图例（图 4D）

- 4.0 DISCONNECTOR SUPPORT — 隔离开关支架
- 4.0.1 INTERMEDIATE GUIDE FOR THE VERTICAL DRIVE SHAFT (*) — 垂直驱动轴(*)的中间导轨
- 4.0.2 DRIVE SUPPORT — 驱动支架
- 4.8 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DISCONNECTOR SUPPORT — 用于固定隔离开关支架的牙条，螺母及开口垫圈
- 4.9 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
- 4.10 SUPPORT BRACKET FOR THE DISCONNECTOR SUPPORT — 隔离开关支架的支架托架
- 4.12 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS — 用于固定托架的牙条，螺母及开口垫圈
- 4.15 SUPPORT BRACKET FOR THE GUIDE PLATE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板的支架托架
- 4.16 SUPPORT FOR THE GUIDE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导轨的支架
- 4.17 GUIDE PLATE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板
- 4.18 FASTENING BOLTS FOR THE SUPPORT OF THE GUIDE — 导轨支架的紧固螺栓
- 4.19 BOLTS FOR FASTENING AND ADJUSTMENT OF THE GUIDE PLATE — 用于紧固和调整导板的螺栓
- 4.20 BUSHING OF THE INTERMEDIATE GUIDE — 中间导轨套管
- 4.21 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE BRACKETS OF THE GUIDE — 用于紧固导轨托架的牙条，螺母及开口垫圈
- 4.22 DRIVE SUPPORT BRACKET — 操作机构支架托架
- 4.24 THREADED BARS, NUTS AND SPLIT WASHERS FOR FASTENING OF THE DRIVE BRACKETS — 用于紧固操作机构托架的牙条，螺母及开口垫圈
- 4.25 SLOTS FOR FASTENING OF THE DRIVE — 用于紧固操作机构的槽口

(*) only for very high installations (see specific installation drawings)

(*)只使用于非常高的装置（见专门安装图纸）

FIG.5: LOWER PART ASSEMBLY OF THE S2DA DISCONNECTOR
图 5: S2DA 隔离开关下半部分组件



OPENS = 分闸

SECTION = 横截面

Key of the assembly and of the sections of the lower part of the S2DA disconnector (Fig. 5)

S2DA 隔离开关下半部分的组件图例（图 5）

- 5.0 LOWER BASE — 下底座
- 5.1 SUPPORT OF THE ROTARY DISCS — 转动盘的支架
- 5.11 ROTARY DISC FOR THE FEMALE ARM — 雌刀臂的转动盘
- 5.12 ROTARY DISC FOR THE MALE ARM — 雄刀臂转动盘
- 5.14 LIMIT STOP FOR THE DISCONNECTOR — 隔离开关的相位档块
- 5.15 HUB FOR CONNECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的连接轮毂
- 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
- 7.13 PIN AND COTTER PINS FOR FASTENING OF THE VERTICAL DRIVE SHAFT — 用于紧固垂直驱动轴的销钉和开口销

FIG. 5A: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE MALE CONTACT

图 5A: 在雄触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件

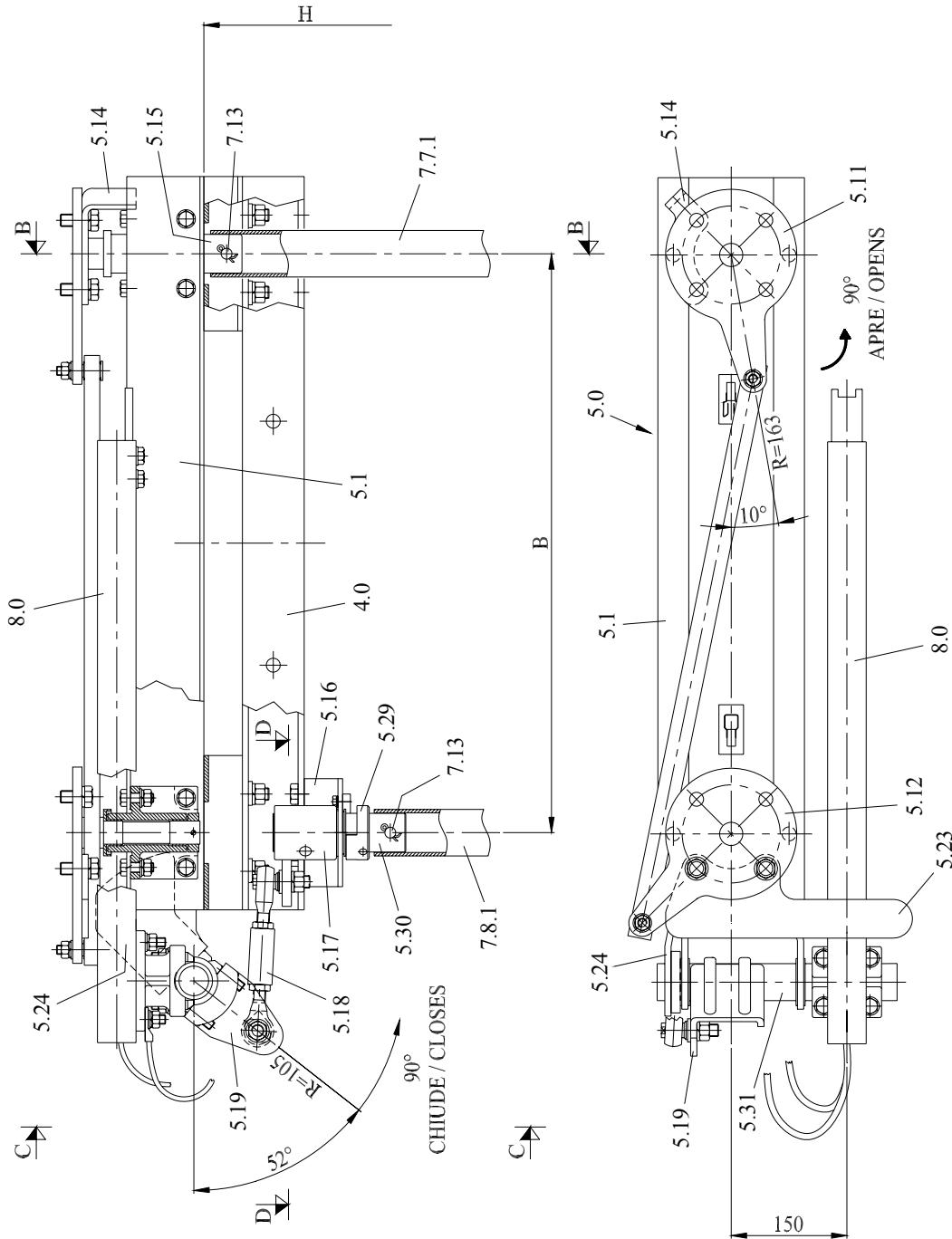
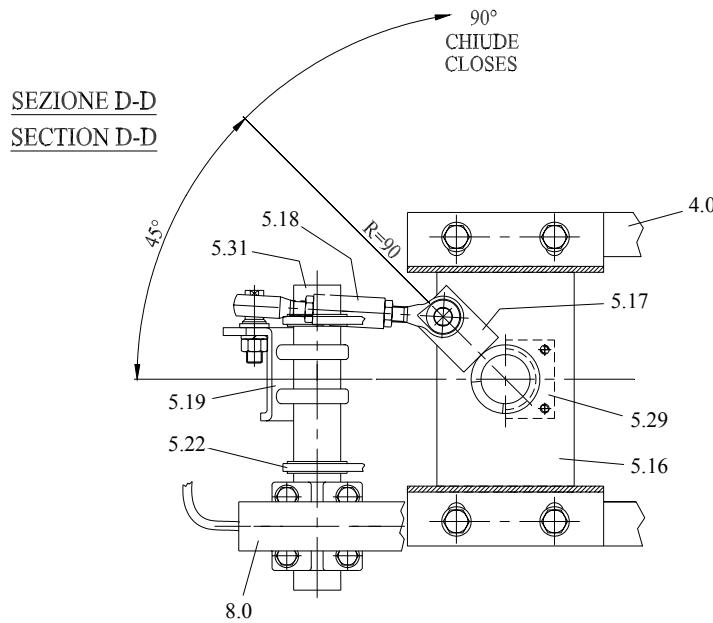
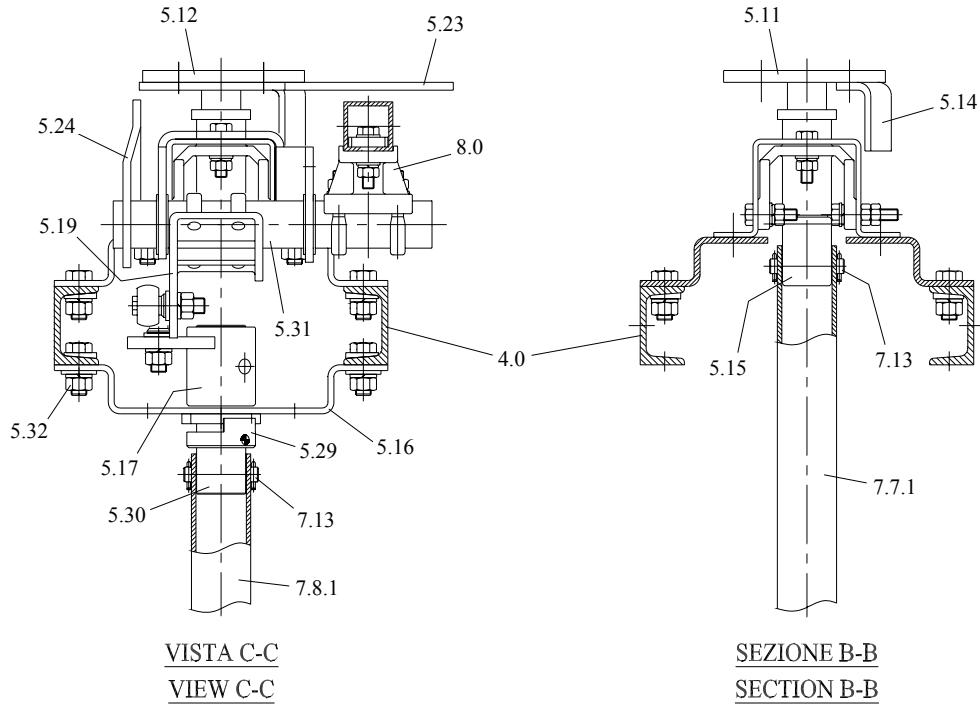


FIG. 5B: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE MALE CONTACT - SECTIONS AND DETAILS

图 5B: 在雄触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件 - 局部和细节



VIEW=图

SECTION=横截面

OPENS = 分闸

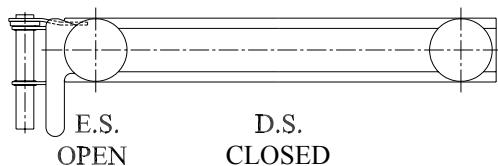
CLOSES = 合闸

FIG. 5C: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE MALE CONTACT - DIAGRAM OF THE INTERLOCKING DEVICE

图 5C: 在雄触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件 – 连锁装置的图表

- SEZIONATORE IN POSIZIONE DI CHIUSO
- SEZ. DI TERRA IN POSIZIONE DI APERTO
- DISCONNECTING SWITCH IN CLOSED POSITION
- EARTHING SWITCH IN OPEN POSITION

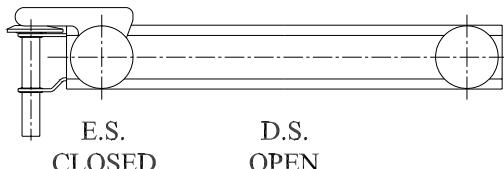
- 隔离开关处于关合位置
- 接地开关处于打开位置



打开的接地开关-----闭合的隔离开关

- SEZIONATORE IN POSIZIONE DI APERTO
- SEZ. DI TERRA IN POSIZIONE DI CHIUSO
- DISCONNECTING SWITCH IN OPEN POSITION
- EARTHING SWITCH IN CLOSED POSITION

- 隔离开关处于打开位置
- 接地开关处于关合位置



闭合的接地开关-----打开的隔离开关

Key of the assembly and of the sections of the lower part of the S2DAT disconnector with earthing switch on the side of the male contact (Fig. 5A, 5B)

在雄触头侧面有接地开关的 S2DAT 隔离开关的下半部分的组件图例（图 5A, 5B）

- 5.0 LOWER BASE — 下底座
- 5.1 SUPPORT OF THE ROTARY DISCS — 转动盘的支架
- 5.11 ROTARY DISC FOR THE FEMALE ARM — 雌刀臂的转动盘
- 5.12 ROTARY DISC FOR THE MALE ARM — 雄刀臂转动盘
- 5.14 LIMIT STOP FOR THE DISCONNECTOR — 隔离开关的相位档块
- 5.15 HUB FOR CONNECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的连接轮毂
- 5.16 SUPPORT OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH
接地开关的垂直驱动轴;
- 5.17 EARTHING-SWITCH CONTROL LEVER — 接地开关控制杆
- 5.18 EARTHING-SWITCH THRUST LINKAGE — 接地开关调节连杆
- 5.19 ADJUSTABLE CONTROL LEVER OF THE EARTHING SWITCH — 接地开关可调控制杆
- 5.22 SUPPORT OF THE HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴的支架
- 5.23 INTERLOCKING PLATE — 互锁板
- 5.24 INTERLOCKING CAM — 互锁凸轮
- 5.29 END STOPS OF THE EARTHING SWITCH — 接地开关的端头挡板
- 5.30 HUB OF THE CONTROL LEVER OF THE EARTHING SWITCH — 接地开关的控制杆的轮毂
- 5.31 HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴
- 5.32 BOLTS FASTENING THE SUPPORT OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 紧固接地开关垂直驱动轴支架的螺栓
- 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
- 7.8.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的上半部分
- 7.13 PIN AND COTTER PINS FOR FASTENING OF THE VERTICAL DRIVE SHAFT — 用于紧固垂直驱动轴的销钉和开口销
- 8.0 EARTHING SWITCH — 接地开关

FIG. 5D: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE FEMALE CONTACT

图 5D: 在雌触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件

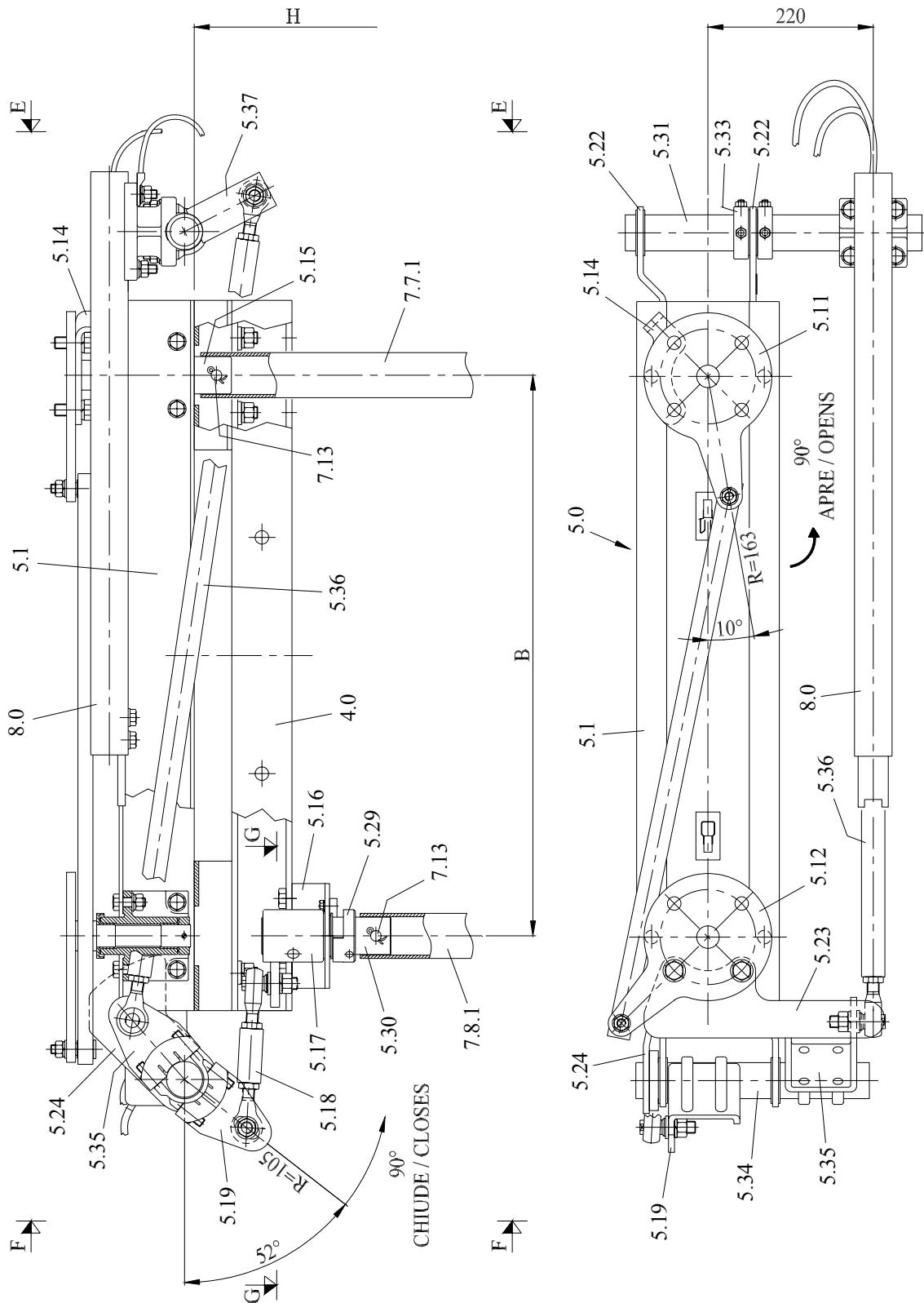
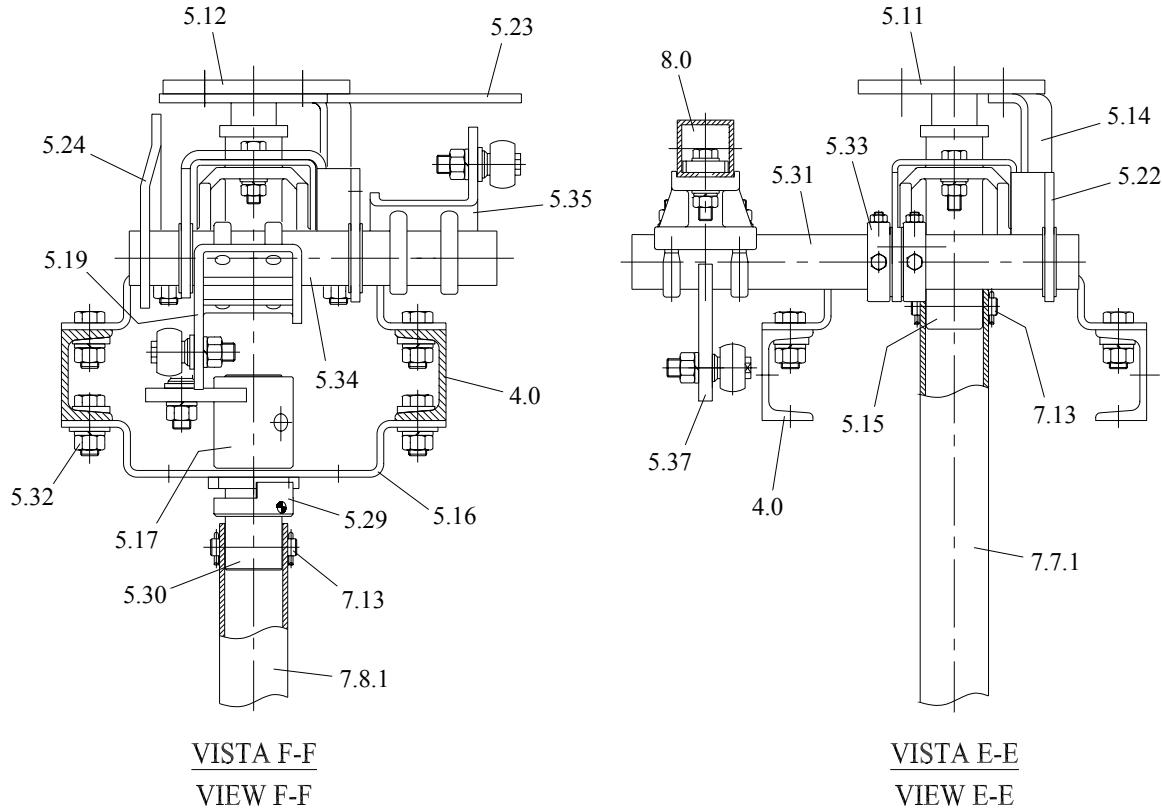


FIG. 5E: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE FEMALE CONTACT – SECTIONS AND DETAILS

图 5E: 在雌触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件 – 局部和细节



VISTA F-F
VIEW F-F

VISTA E-E
VIEW E-E

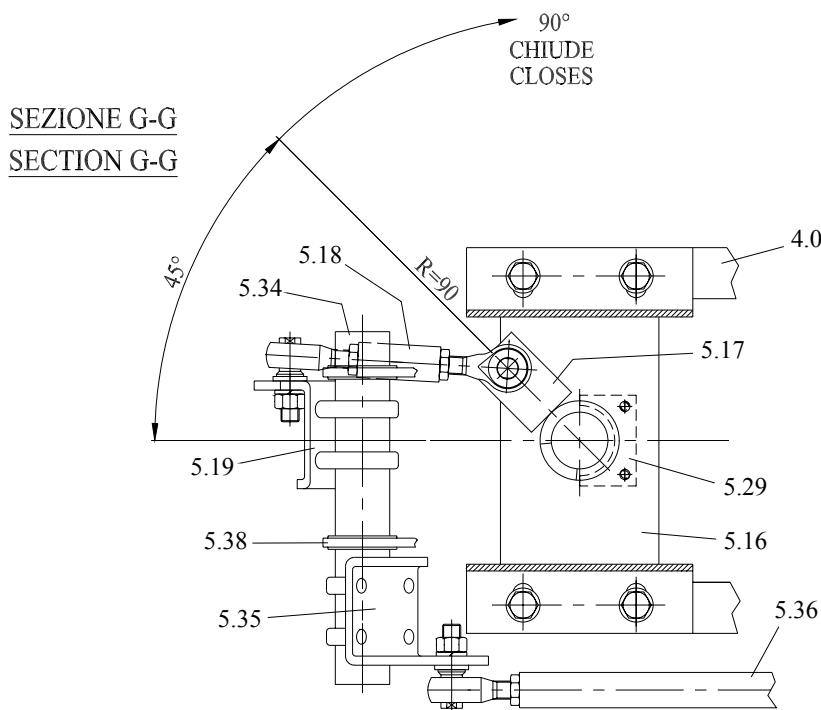
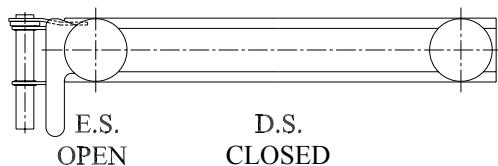


FIG. 5F: ASSEMBLY OF THE LOWER PART OF THE S2DAT DISCONNECTOR WITH EARTHING SWITCH ON THE SIDE OF THE FEMALE CONTACT - DIAGRAM OF THE INTERLOCKING DEVICE

图 5F: 在雌触头侧面有接地开关的 S2DAT 隔离开关的下半部分组件 – 连锁装置的图表

- SEZIONATORE IN POSIZIONE DI CHIUSO
- SEZ. DI TERRA IN POSIZIONE DI APERTO
- DISCONNECTING SWITCH IN CLOSED POSITION
- EARTHING SWITCH IN OPEN POSITION

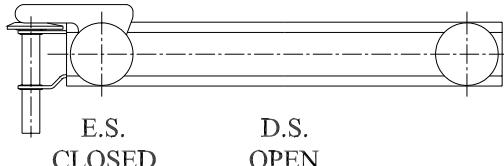
- 隔离开关处于关合位置
- 接地开关处于打开位置



打开的接地开关-----闭合的隔离开关

- SEZIONATORE IN POSIZIONE DI APERTO
- SEZ. DI TERRA IN POSIZIONE DI CHIUSO
- DISCONNECTING SWITCH IN OPEN POSITION
- EARTHING SWITCH IN CLOSED POSITION

- 隔离开关处于打开位置
- 接地开关处于关合位置



闭合的接地开关-----打开的隔离开关

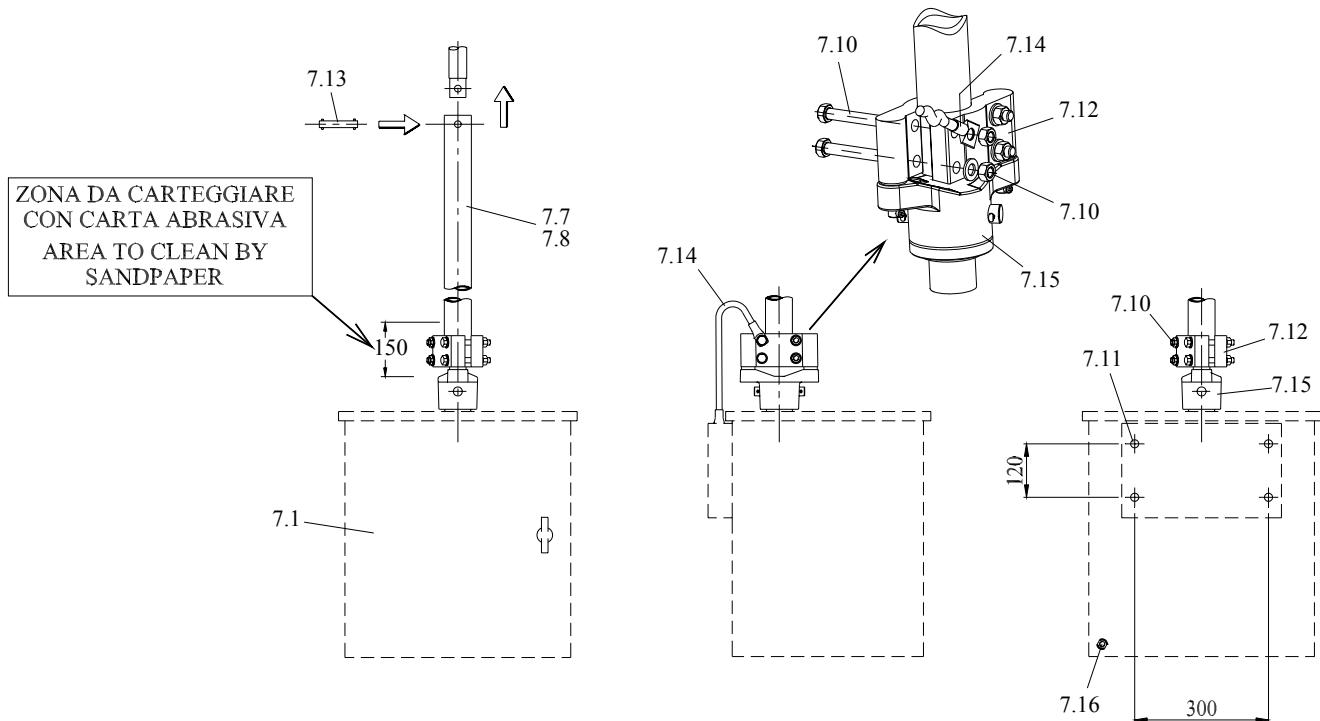
Key of the assembly and of the sections of the lower part of the S2DAT disconnector with earthing switch on the side of the female contact (Fig. 5D, 5E)

在雌触头侧面有接地开关的 S2DAT 隔离开关下半部分的组件图例 (图 5D, 5E)

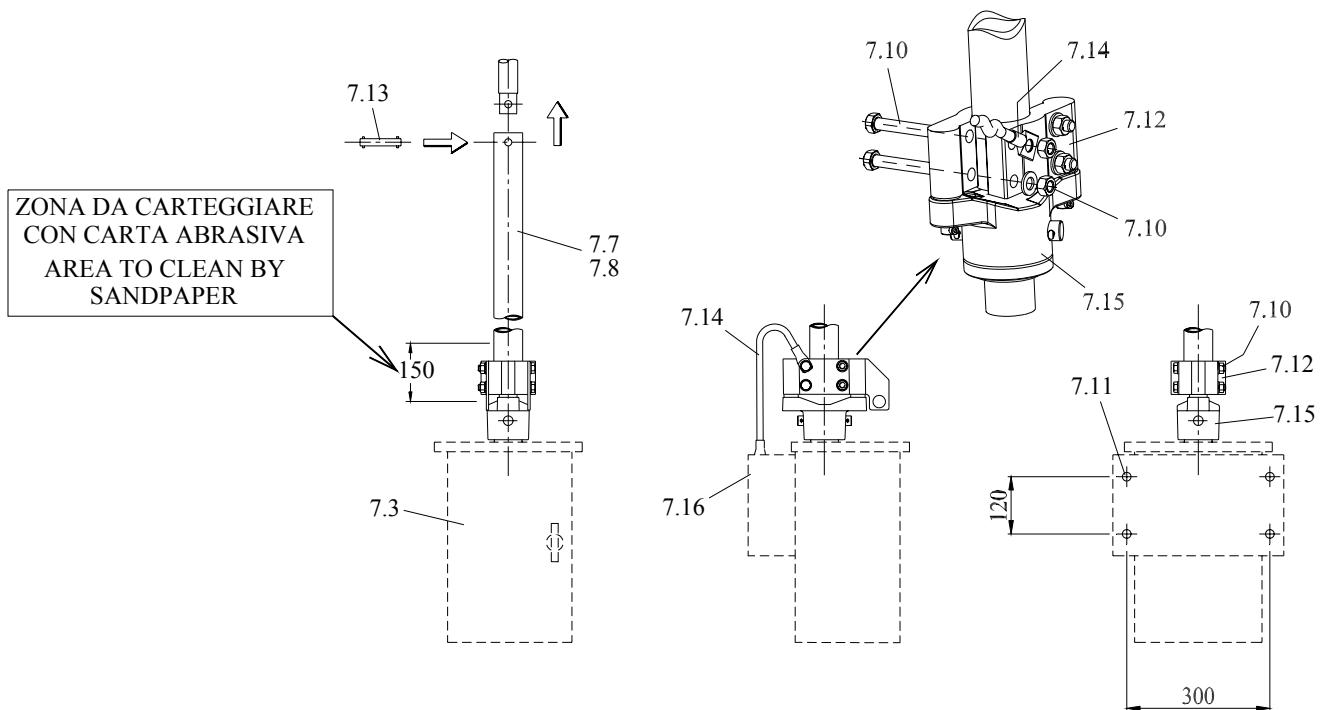
- 5.0 LOWER BASE — 下底座
- 5.1 SUPPORT OF THE ROTARY DISCS — 转动盘的支架
- 5.11 ROTARY DISC FOR THE FEMALE ARM — 雌刀臂的转动盘
- 5.12 ROTARY DISC FOR THE MALE ARM — 雄刀臂转动盘
- 5.14 LIMIT STOP FOR THE DISCONNECTOR — 隔离开关的相位档块
- 5.15 HUB FOR CONNECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的连接轮毂
- 5.16 SUPPORT OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关的垂直驱动轴支架
- 5.17 EARTHING-SWITCH CONTROL LEVER — 接地开关控制杆
- 5.18 EARTHING-SWITCH THRUST LINKAGE — 接地开关调节连杆
- 5.19 ADJUSTABLE CONTROL LEVER OF THE EARTHING SWITCH — 接地开关可调控制杆
- 5.22 SUPPORT OF THE HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴的支架
- 5.23 INTERLOCKING PLATE — 互锁板
- 5.24 INTERLOCKING CAM — 互锁凸轮
- 5.29 END STOPS OF THE EARTHING SWITCH — 接地开关的端头挡板
- 5.30 HUB OF THE CONTROL LEVER OF THE EARTHING SWITCH — 接地开关的控制杆的轮毂
- 5.31 HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴
- 5.32 BOLTS FASTENING THE SUPPORT OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 紧固接地开关垂直驱动轴支架的螺栓
- 5.33 LOCKING RINGS
锁紧环
- 5.34 HORIZONTAL TRANSMISSION SHAFT OF THE ADJUSTABLE LEVERS OF THE EARTHING SWITCH — 接地开关的可调节杆的水平传动轴
- 5.35 ADJUSTABLE CONTROL LEVER OF THE EARTHING SWITCH — 接地开关可调控制杆
- 5.36 EARTHING-SWITCH THRUST LINKAGE — 接地开关调节连杆
- 5.37 EARTHING-SWITCH CONTROL LEVER — 接地开关控制杆
- 5.38 SUPPORT OF THE HORIZONTAL TRANSMISSION SHAFT OF THE ADJUSTABLE LEVERS OF THE EARTHING SWITCH — 接地开关可调节杆的水平传动轴支架
- 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
- 7.8.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直驱动轴的上半部分
- 7.13 PIN AND COTTER PINS FOR FASTENING OF THE VERTICAL DRIVE SHAFT — 用于紧固垂直驱动轴的销钉和开口销
- 8.0 EARTHING SWITCH — 接地开关

FIG. 7: VERTICAL DRIVE SHAFT AND DRIVE
图7: 驱动机构和垂直驱动轴

ONE-SHAFT MOTOR DRIVE
单轴电机驱动机构



ONE-SHAFT MANUAL DRIVE
单轴手动驱动机构



AREA TO CLEAN BY SAND PAPER =要用砂纸打磨干净的区域

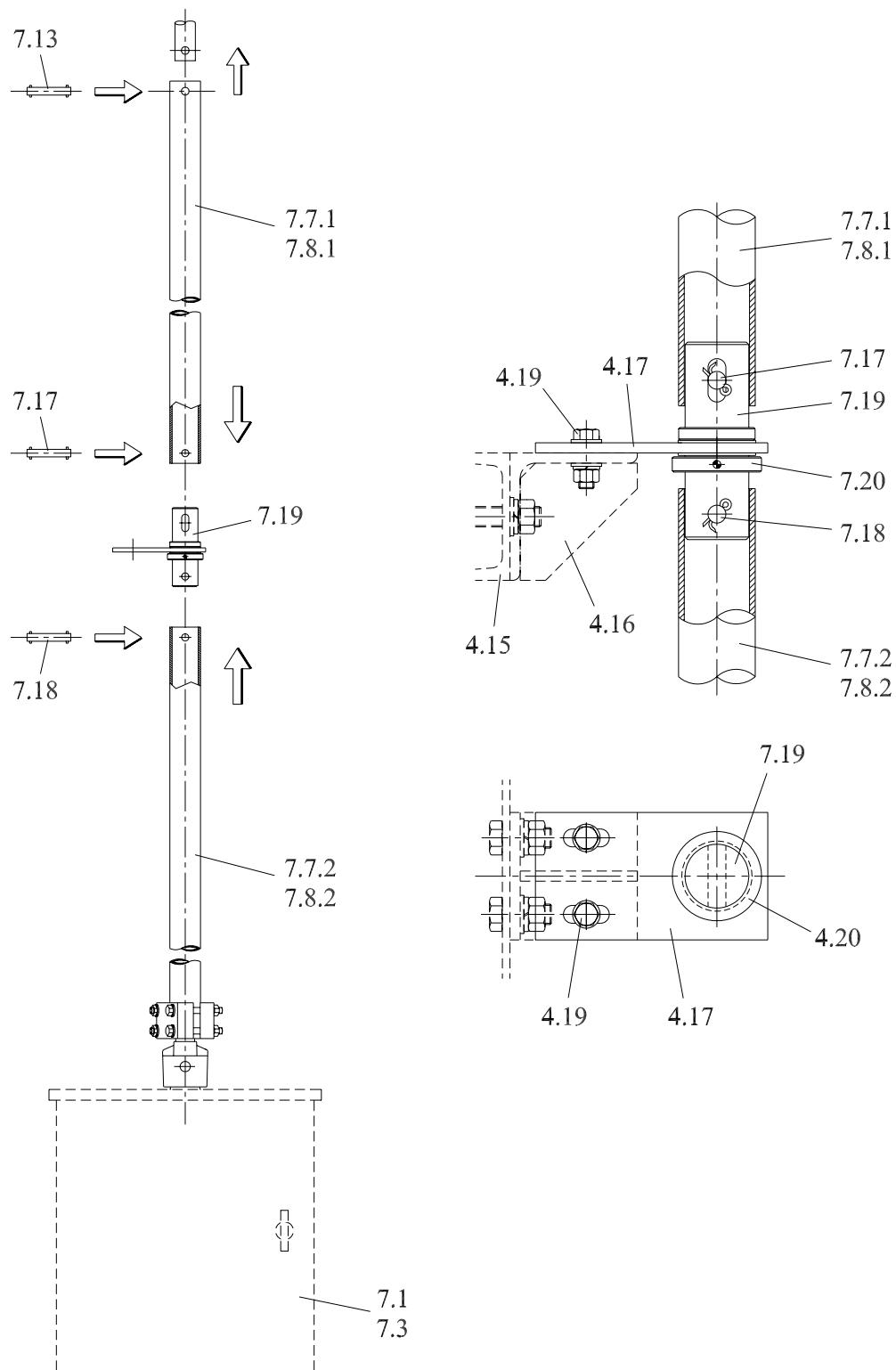
Key of the drive with vertical drive shaft (Fig. 7)

带垂直驱动轴的驱动机构的关键部件 (图 7)

- 7.1 ONE-SHAFT MOTOR DRIVE — 单轴电机驱动机构
- 7.3 ONE-SHAFT MANUAL DRIVE — 单轴手动驱动机构
- 7.7 VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关的垂直连杆
- 7.8 VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关的垂直连杆
- 7.10 SHAFT FASTENING BOLTS (SCREW, PLAIN WASHER, NUT) — 轴紧固螺栓 (螺钉, 平垫片, 螺母)
- 7.11 HOLES FOR FASTENING TO THE STRUCTURE — 连至支承结构的连接孔
- 7.12 CLAMP — 卡箍
- 7.13 LOCK PIN AND COTTER PINS FOR FASTENING — 锁定销钉和开口销
- 7.14 EARTHING STRANDED CABLE — 接地软导线
- 7.15 CLAMP SUPPORT — 卡箍支承
- 7.16 EARTHING BOLT — 接地螺栓

FIG. 7A: INSTALLATION OF THE VERTICAL DRIVE SHAFTS

图 7A: 隔离开关垂直转动轴

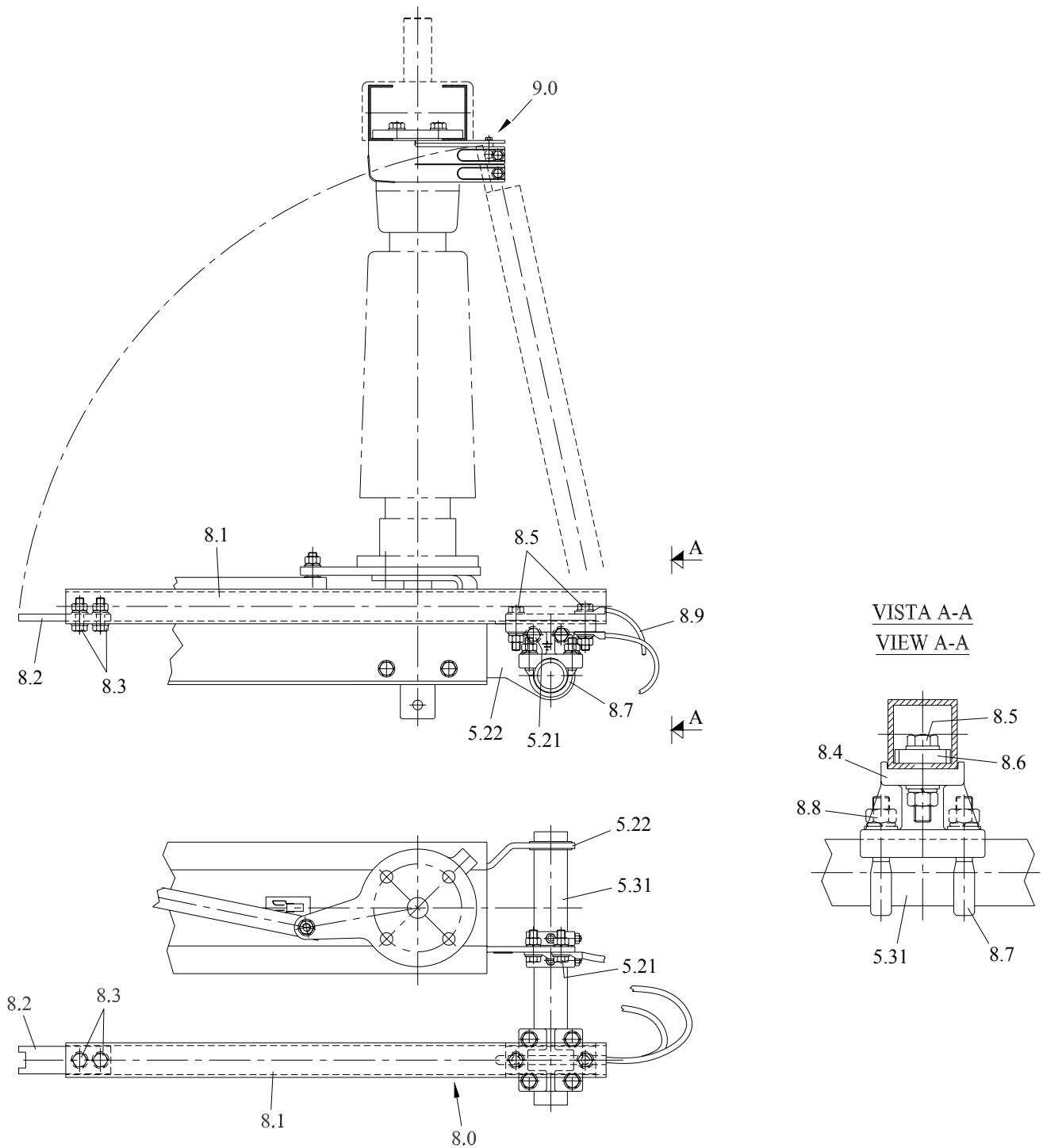


Key of the installation of the vertical drive shafts (Fig. 7A)

垂直驱动轴 (图 7A) 的安装图例

- 4.15 SUPPORT BRACKET FOR THE GUIDE PLATE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板的支架托架
- 4.16 SUPPORT FOR THE GUIDE OF THE VERTICAL DRIVE SHAFT — 垂直驱动轴导轨的支架
- 4.17 GUIDE PLATE FOR THE VERTICAL DRIVE SHAFT — 垂直驱动轴导板
- 4.19 BOLTS FOR FASTENING AND ADJUSTMENT OF THE GUIDE PLATE — 用于紧固和调整导板的螺栓
- 4.20 BUSHING OF THE INTERMEDIATE GUIDE — 中间导轨套管
- 7.1 MOTOR DRIVE — 电机驱动机构
- 7.3 MANUAL DRIVE — 手动驱动机构
- 7.7.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直驱动轴的上半部分
- 7.7.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE DISCONNECTOR — 隔离开关垂直转动轴的下半部分
- 7.8.1 UPPER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的上半部分
- 7.8.2 LOWER SECTION OF THE VERTICAL DRIVE SHAFT OF THE EARTHING SWITCH — 接地开关垂直转动轴的下半部分
- 7.13 LOCK PIN AND COTTER PINS FOR FASTENING — 锁定销钉和开口销
- 7.17 LOCK PIN AND COTTER PINS FOR FASTENING — 锁定销钉和开口销
- 7.18 LOCK PIN AND COTTER PINS FOR FASTENING — 锁定销钉和开口销
- 7.19 CONNECTION HUB FOR THE VERTICAL DRIVE SHAFTS — 垂直驱动轴的连接轮毂
- 7.20 LOCKING RING — 锁紧环

FIG. 8: EARTHING SWITCH
图 8: 接地开关

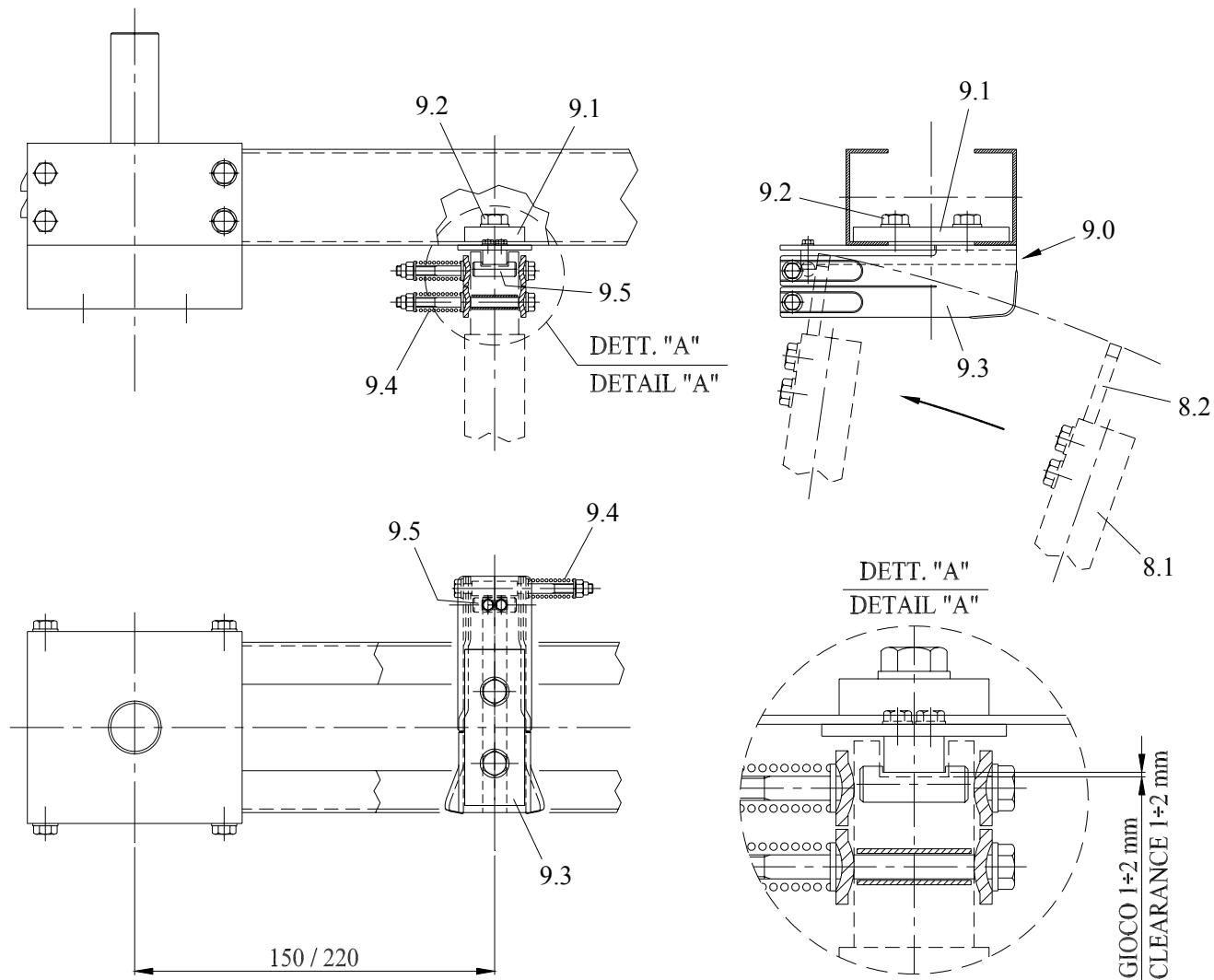


Key of the assembly and of the details of the earthing switch (Fig. 8)

接地开关组件和详图（图 8）图例

- 5.31 HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴
- 5.21 FASTENING SCREWS OF THE EARTHING STRANDED CABLES — 接地绞合电缆的紧固螺钉
- 5.22 SUPPORT OF THE HORIZONTAL TRANSMISSION SHAFT OF THE EARTHING SWITCH — 接地开关的水平传动轴的支架
- 8.0 EARTHING SWITCH — 接地开关
- 8.1 MOBILE ARM OF THE EARTHING SWITCH — 接地开关动臂
- 8.2 MALE MOBILE CONTACT — 雄动触头
- 8.3 SCREW FASTENING THE MALE MOBILE CONTACT — 用于紧固雄触头的螺钉
- 8.4 MOBILE ARM SUPPORT — 动刀臂支架
- 8.5 BOLTS FASTENING THE MOBILE ARM — 用于紧固动刀臂的螺栓
- 8.6 PLATE FASTENING THE MOBILE ARM — 用于紧固动刀臂的板
- 8.7 U-BOLTS FOR FASTENING OF THE MOBILE ARM TO THE HORIZONTAL TRANSMISSION SHAFT — 用于将动刀臂紧固到水平传动轴的 U 形螺栓
- 8.8 NUTS FOR FASTENING OF THE MOBILE ARM TO THE HORIZONTAL TRANSMISSION SHAFT — 用于将动刀臂紧固到水平传动轴的螺帽
- 8.9 EARTHING STRANDED CABLES — 接地多股绞合电缆
- 9.0 ASSEMBLY OF THE FIXED CONTACT OF THE EARTHING SWITCH — 接地开关静触头组件

FIG. 9: ASSEMBLY OF THE FIXED CONTACT OF THE EARTHING SWITCH
图 9: 接地开关静触头组件



DETAIL = 细节

CLEARANCE=间隙

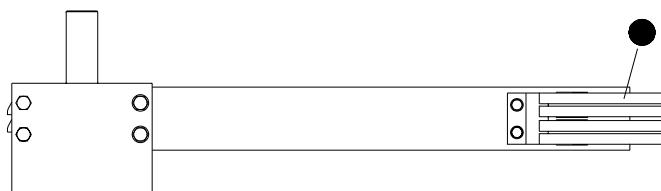
WARNING: THE FIXED CONTACT OF THE EARTHING SWITCH IS INSTALLED IN THE SAME WAY ON THE MALE ARM AND ON THE FEMALE ARM.

警告: 在雄刀臂和雌刀臂上安装接地开关静触头的方法相同。

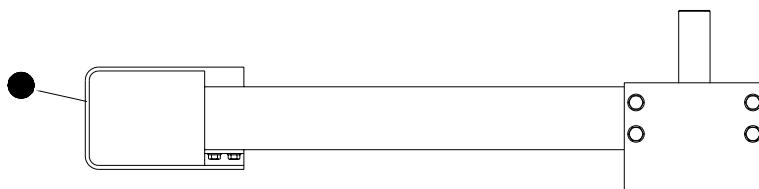
- 8.1 MOBILE ARM OF THE EARTHING SWITCH — 接地开关动臂
- 8.2 MALE MOBILE CONTACT — 雄动触头
- 9.0 FIXED CONTACT UNIT — 静触头装置
- 9.1 CONTACT HOLDING PLATE — 触头固定板
- 9.2 SCREWS FOR FASTENING OF THE CONTACT-HOLDING PLATE — 用于紧固触头固定板的螺钉
- 9.3 FEMALE FIXED CONTACT OF THE EARTHING SWITCH — 接地开关的雌静触头
- 9.4 PRESSURE SPRINGS — 压力弹簧
- 9.5 END STOP — 端头挡板

FIG. 10: LUBRICATION AND GREASING

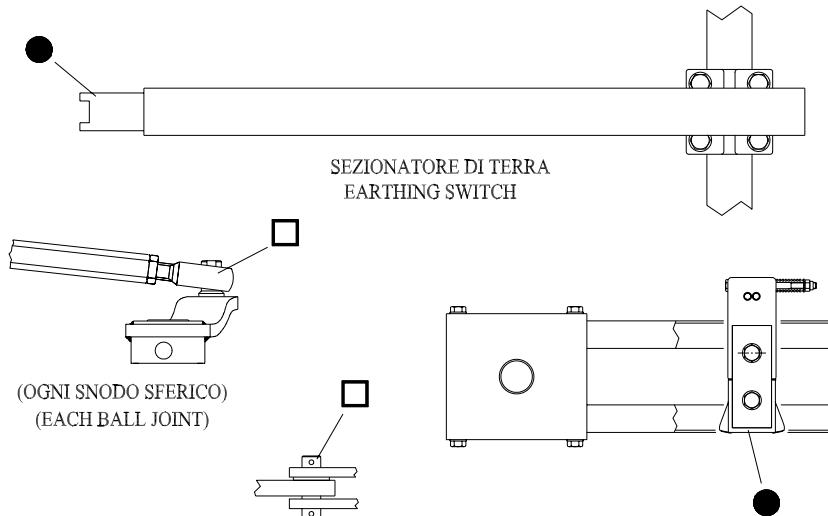
图 10: 加油润滑和加脂润滑



GRUPPO BRACCIO MOBILE CON CONTATTO FEMMINA
MOBILE ARM ASSEMBLY WITH FEMALE CONTACT



GRUPPO BRACCIO MOBILE CON CONTATTO MASCHIO
MOBILE ARM ASSEMBLY WITH MALE CONTACT



MOBILE ARM ASSEMBLY WITH FEMALE CONTACT = 带雌静触头的动臂组件

MOBILE ARM ASSEMBLY WITH MALE CONTACT = 带雄静触头的动臂组件

EARTHING SWITCH = 接地开关

EACH BALL JOINT = 每个球铰



NYOGEL 760G (alternatively 另一选择: RHEOLUBE 365, ASEOL Sylitea 3 0-365.2)

The contact areas are protected with neutral Vaseline before shipment. Before installing the equipment, remove the Vaseline with a dry cloth, then apply the grease indicated above with a brush (the quantity required for the first greasing is included in the supply).

装运前触头区域涂有中性凡士林保护层。设备安装前，用干布清除凡士林，然后用刷子刷上上述润滑脂（供货时已配第一次加脂所需的量）



MULTI-F-S (alternatively 另一选择: SILAN)

These parts have already been lubricated in our factory. The following lubrications should be carried out as directed in Chapter 8.

这些部位出厂前已经润滑。下次润滑根据第 8 章指示进行。

ATTACHMENT "A": SPECIFICATIONS FOR THE S2DA / S2DAT DISCONNECTORS
附件A：S2DA / S2DAT型隔离开关详细规格

Rated Voltage [Ur] 额定电压[Ur]	kV	27,5
Rated Current [Ir] 额定电流[Ir]	A	1250
Rated Short-Time Withstand Current [Ik], up to... 额定短时耐受电流[Ik], 最高至...	kA x s kA	31,5 x 3 80
Rated Peak Withstand Current [Ip], up to... 额定峰值耐受电流[Ip], 最高至...		
Rated Power Frequency Withstand Voltage		
[Ud] 额定工频耐受电压[Ud]		
- To Earth and Between the Poles 对地和相间	kV	140
- Across the Insulating Distance 断口间	kV	160
Rated Lightning Impulse Withstand Voltage[Up]		
额定雷电脉冲耐受电压[Up]		
- To Earth and Between the Poles 对地和相间	kV	325
- Across the Insulating Distance 断口间	kV	375
Rated Switching Impulse Withstand Voltage[Us]		
额定开关脉冲耐受压[Us]		
- To Earth and Between the Poles 对地和相间	kV	N.A. 不适用
- Across the Insulating Distance 断口间	kV	N.A. 不适用

SEE THE INSTRUCTION MANUAL OF THE DRIVE FOR THE TECHNICAL DATA OF THE DRIVE.
驱动机构的技术参数见驱动机构安装手册

ATTACHMENT "B": TIGHTENING TORQUES FOR SCREWS & BOLTS

附件 B: 螺钉螺栓紧固扭矩

NOMINAL DIAMETER 公称尺寸	STAINLESS STEEL 不锈钢		HOT-GALVANIZED STEEL 热镀锌钢	
	SCREWS 螺钉	BOLTS 螺栓	SCREWS 螺钉	BOLTS 螺栓
Nm	Nm	Nm	Nm	Nm
M4	/	1.5	/	/
M5	/	3	/	/
M6	4.5	5	/	/
M8	11	12	/	/
M10	19	23	/	/
M12	32	40	58	65
M14	50	63	90	105
M16	78	95	140	160
M18	/	126	190	220
M20	/	175	270	300
M22	/	240	360	400
M24	/	320	470	520

WARNING: in case of connection of stainless steel with hot-galvanized steel,
comply with stainless steel values

警告：不锈钢与热镀锌钢件混装时，按不锈钢件取值。

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

安装和维护说明手册



D0578-02-ZH

100/100

ATTACHMENT "C": RECORDING FORM FOR COMMISSIONING OF SWITCHGEARS

附件 C: 开关设备调试记录表

Customer 用户 S/S 站名

Order 订单号 Equipment type 设备型号

Serial No. 序列号 Wiring diagram DIN 接线图号 DIN

Installation drawing DIN 安装图号 DIN Installation instructions 安装说明

1) CHECKS: 检查 :

		Sign after test 检后签名	Remarks or measured values 备注或测定值
1.1	Dimensional check according to installation drawing 根据安装图进行尺寸检查		
1.2	Verification of verticality of installed insulators 所安装的绝缘子的垂直度确认		
1.3	Verification of correct installation of drive 操作机构安装正确性确认		
1.4	Verification of correct installation of shafts and transmissions components 轴和传动部件安装正确性确认		
1.5	Verification of alignment and coupling of fixed and mobile contacts 动静触头对中性与耦合度确认		

2) TESTS OF OPERATION: 操作试验 :

		Sign after test 检后签名	Remarks or measured values 备注或测定值
2.1	Perform 5 manual operations and verify that the opening and closing movements are correct 进行5次手动操作，确认分合操作正常		
2.2	Perform 5 motor operations and check that the end positions are correctly reached 进行5次电动操作，确认终点操作到位		
2.3	Verify the correct signaling of the auxiliary contacts 确认辅助触头信号正确		

3) CURRENT CONSUMPTION OF MOTOR: (Maximum value excluded the starting peak) 电机耗电电流(不包括起动峰值的最大值):

3.1 Perform 5 operations (C. O.) and write the average value of the results
进行5次操作(“关” “开”), 记下测得值的平均值

POLE 相	DISCONNECTOR 隔离开关		EARTHING SWITCH (mobile contact side) 接地开关(动触头侧)		EARTHING SWITCH (fixed contact side) 接地开关(静触头侧)		VOLTAGE 电压
	CLOSING 关合	OPENING 打开	CLOSING 关合	OPENING 打开	CLOSING 关合	OPENING 打开	
A	(A)	(A)	(A)	(A)	(A)	(A)	(A)
B	(A)	(A)	(A)	(A)	(A)	(A)	(A)
C	(A)	(A)	(A)	(A)	(A)	(A)	(A)

4) CONTACT RESISTANCE OF MAIN CIRCUIT: 主回路接触电阻

4.1	Reference value..... μΩ at 20°C, ±20 % 参考值..... μΩ (20°C, ±20 %)	POLE 相	RESISTANCE 电阻	ENV. TEMP. 环境温度	CURRENT 电流
		A	(μΩ)	(°C)	(A)
		B	(μΩ)	(°C)	(A)
		C	(μΩ)	(°C)	(A)

After the above verifications we declare that, as far as we are concerned, the switchgear is suitable to be put in service.
经过上述查证, 我们宣布: 就我们所知, 此设备适合投入运行。

Signature: 签名 Date: 日期