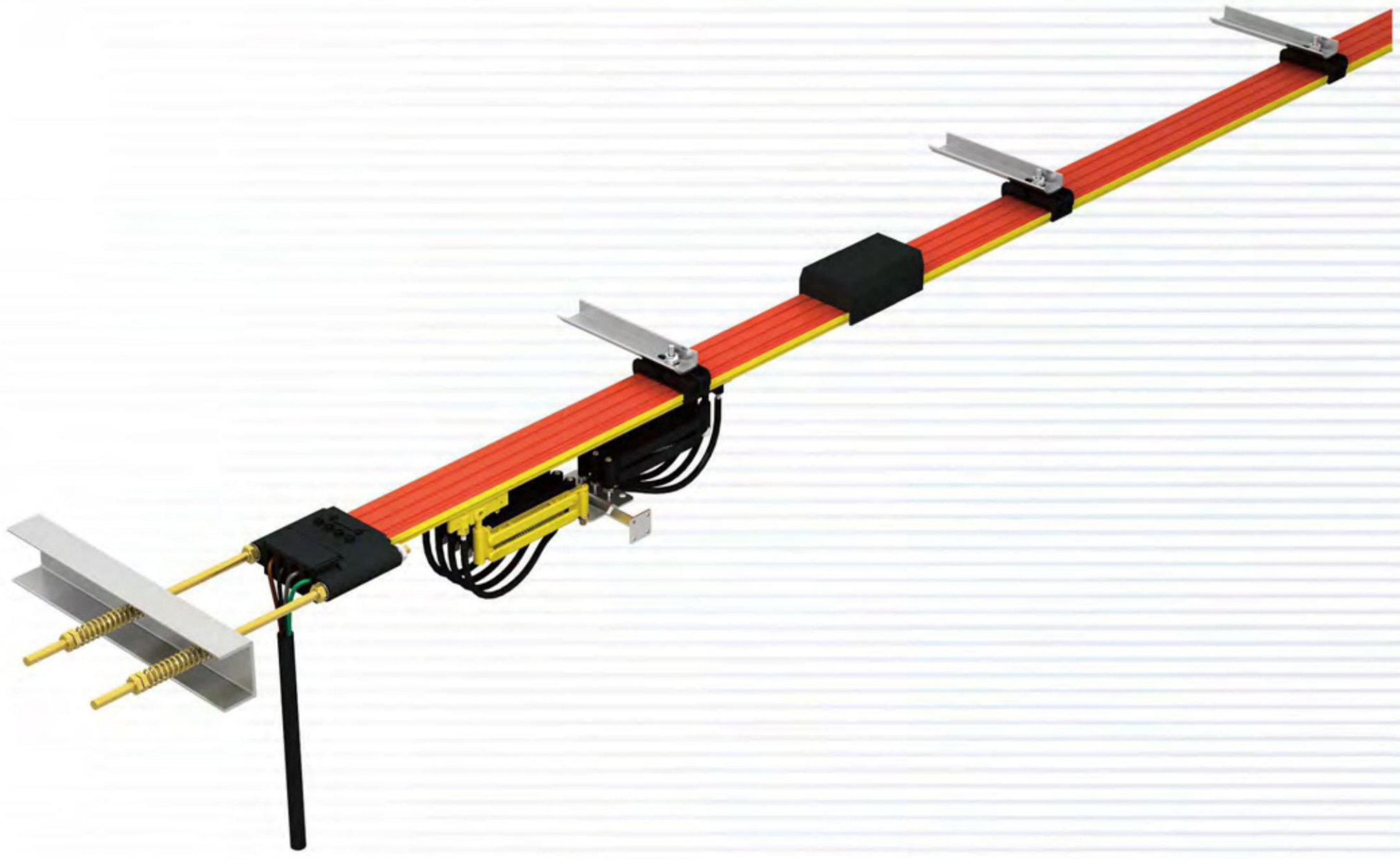
无接缝滑触线AN系列

HIGH-TRO-REEL SYSTEMS AN



KNCRANES

产品简介/Introduction of products

随着 FMS 化、无人工厂化，设备的自动化程度越来越高，因此滑触线的小型化、安装简便性、高速平稳性显得极为重要。为满足市场发展的需要，本公司成功开发了 AN 系列无接缝滑触线，本系统具有运行平稳、速度快、噪音低、供电方式随意性高等特点。

With FMS, unmanned factory, increasing the degree of automation of the device, the miniaturization of the conductor rail system, ease of installation, high-speed stability is extremely important. To meet the needs of market development, we has successfully developed the AN series seamless conductor rail system, the system has the following advantages, run smoothly, high speed, low noise, powered way arbitrariness.

目录/Contents

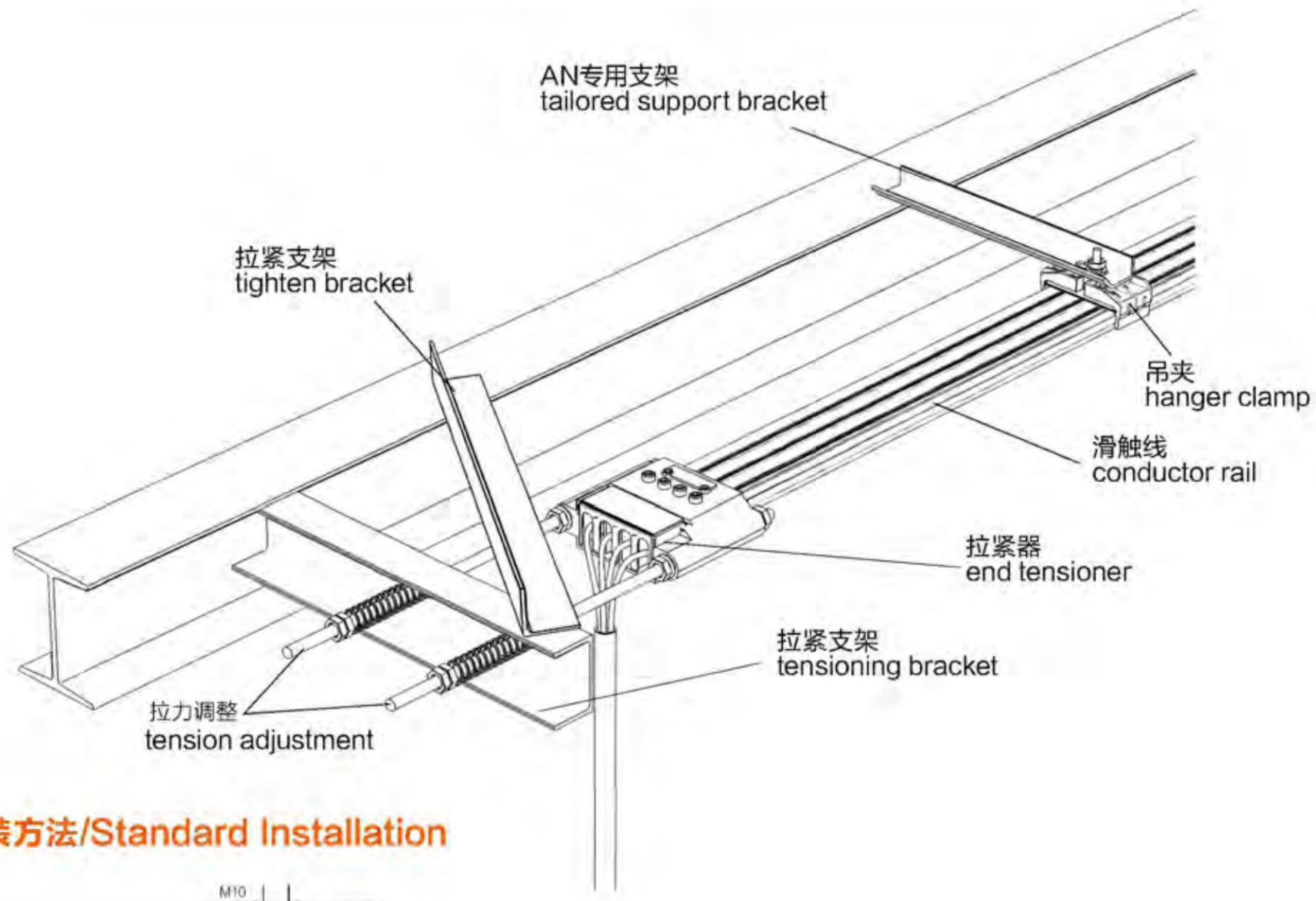
安装示意图/Installation View

● 提供 1000 米以内无接缝滑线本体

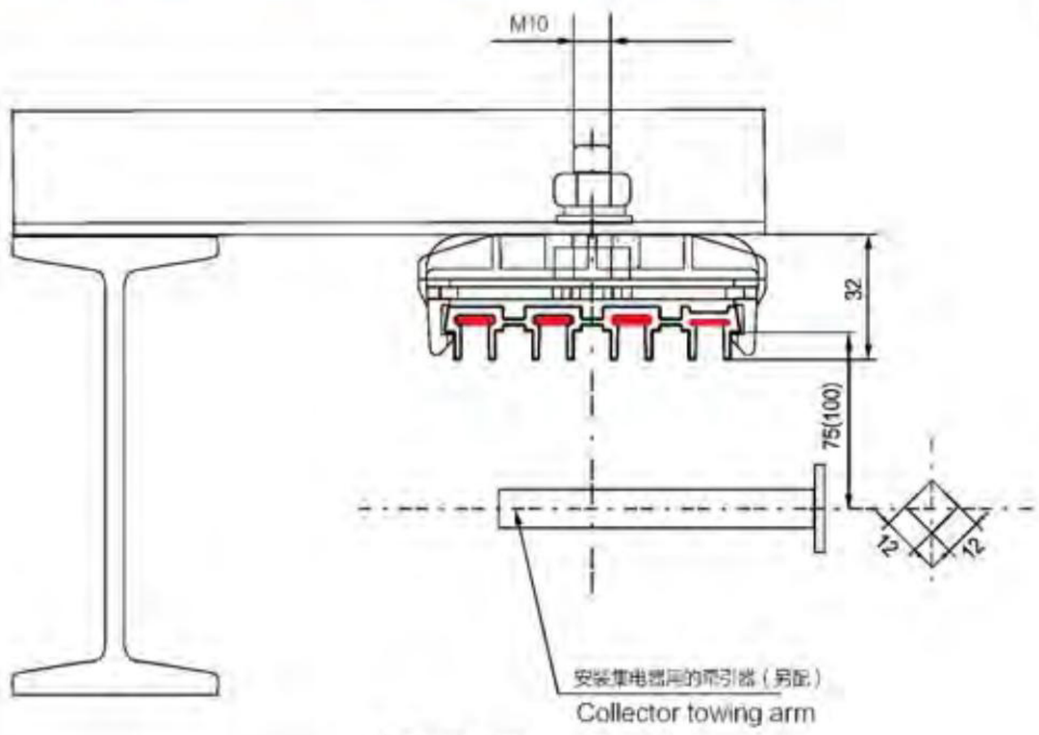
● 方便快速安装。根据不同的负载要求提供 3P、4P(50A、80A、100A、120A、140A)各 5 种型号，可与负载进行匹配，经济的选择利用。同时 3P、4P 可组合成 6P 及以上的型号。

● Supply 1000m conductor without any joint.

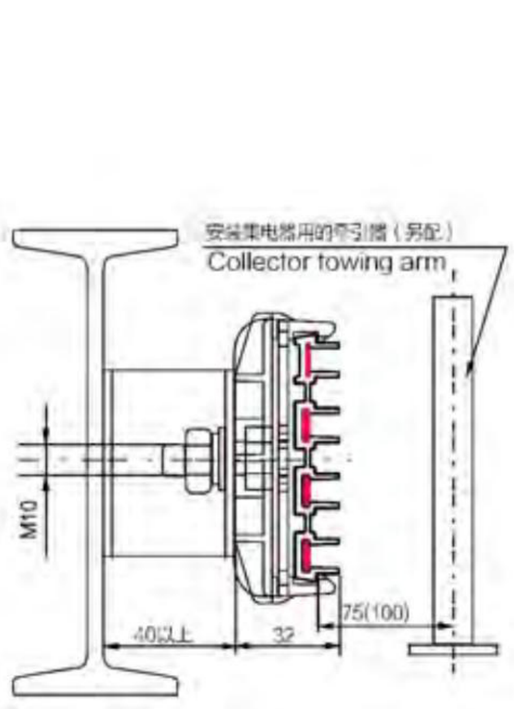
● Installation easily and quickly.Offer 3P, 4P (50A, 80A, 100A, 120A, 140A) Five types, with the load matching, selection and utilization economically. Meanwhile 3P, 4P can be combined into the 6P and above types.



标准安装方法/Standard Installation



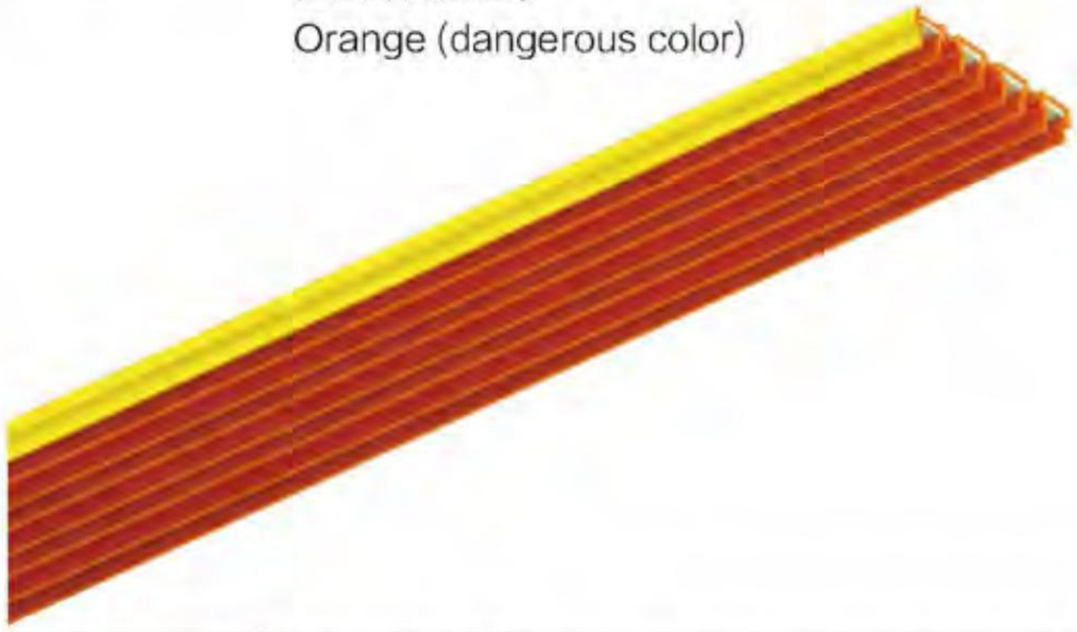
水平安装
Horizontal installation



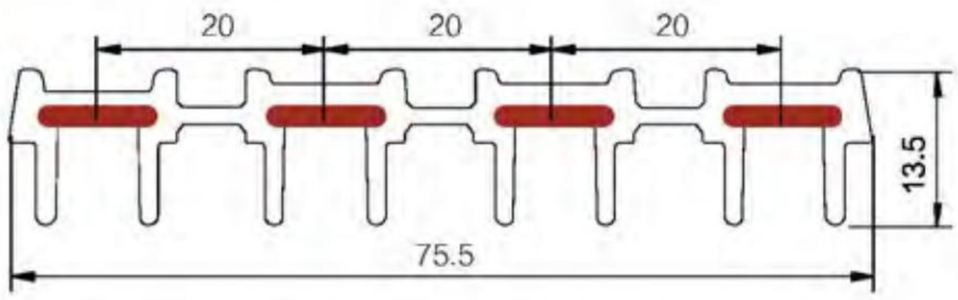
垂直安装(工字钢轨)
Vertical insatllation

AN4P本体（室内专用）/AN4P Body (indoor only)

- 额定值/Rating：4P；660V　50A~120A
- 导体材质：铜 Conductor material: copper
- 绝缘外套材质：硬质聚氯乙烯（耐热：75℃）
  nsulation jacket Material: rigid PVC (heat resistance: 75 ℃)
  橙色（危险色）
  Orange (dangerous color)



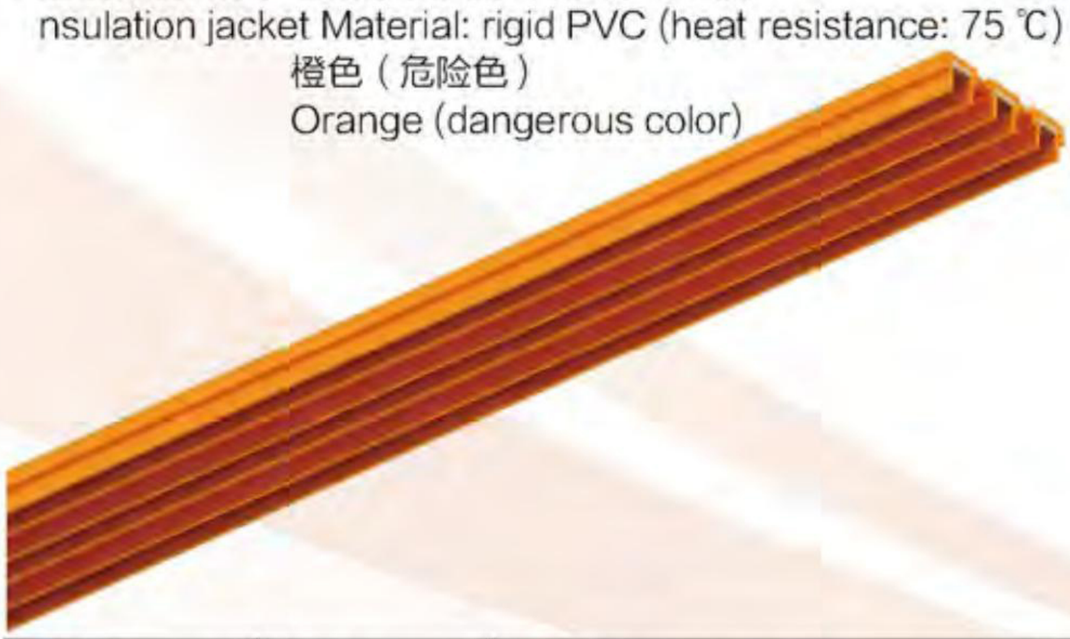
比例尺：1:1 Scale1:1



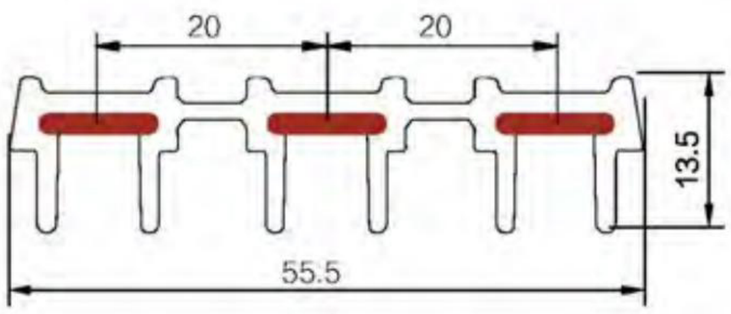
型号/Type	极数/Poles	截面积/Conductor cross section(mm²)	额定载流量/Max.current(A)	产品编码/Cat.-No.
AN761004	4	4×10mm²	50A	761004
AN761504	4	3×15mm²+1×10mm²	80A	761504
AN762004	4	3×20mm²+1×10mm²	100A	762004
AN762504	4	3×25mm²+1×12.5mm²	120A	762504
AN763504	4	3×35mm²+1×15mm²	140A	763504

AN3P本体（室内专用）/AN3P Body (indoor only)

- 额定值/Rating：3P；660V　50A~120A
- 导体材质：铜 Conductor material: copper
- 绝缘外套材质：硬质聚氯乙烯（耐热：75℃）
  nsulation jacket Material: rigid PVC (heat resistance: 75 ℃)
  橙色（危险色）
  Orange (dangerous color)



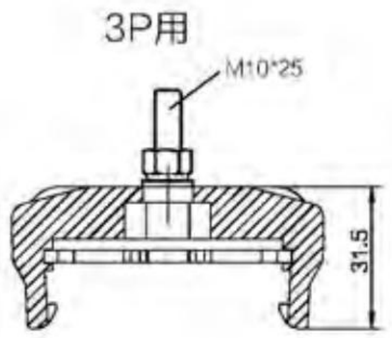
比例尺：1:1 Scale1:1

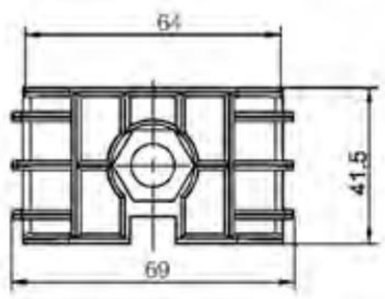


型号/Type	极数/Poles	截面积/Conductor cross section(mm²)	额定载流量/Max.current(A)	产品编码/Cat.-No.
AN761003	3	3×10mm²	50A	761003
AN761503	3	3×15mm²	80A	761503
AN762003	3	3×20mm²	100A	762003
AN762503	3	3×25mm²	120A	762503
AN763503	3	3×35mm²	140A	763503

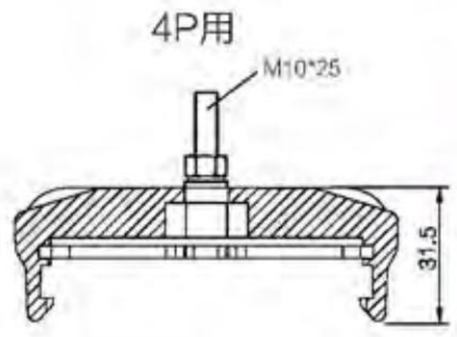
吊夹/Hanger Clamp

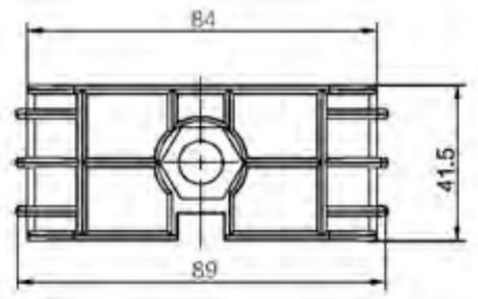
3P用





4P用





型号/Type	类型/Model	重量/Weight（kg）	材质/Material	产品编码/Cat.-No.
AN768503	3P 50A-120A用	0.070	工程塑料/Plastic	768503
AN768513	3P 140A用	0.068	工程塑料/Plastic	768513
AN768504	4P 50A-120A用	0.080	工程塑料/Plastic	768504
AN768514	4P 140A用	0.078	工程塑料/Plastic	768514

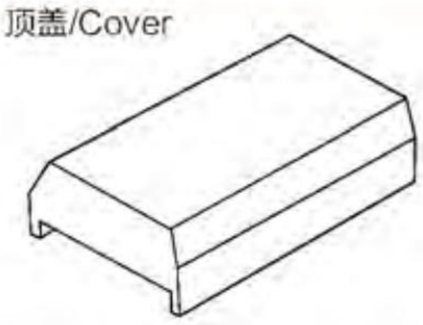
连接盒（中间供电器）/Jointing Box(Line Feeding)

弯连接接头
Bended joints

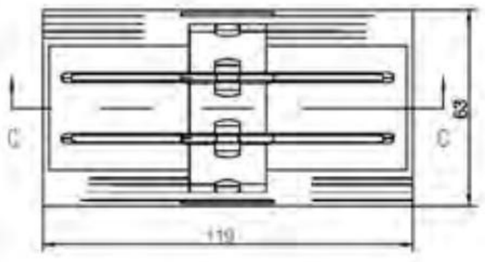
型号/Type	类型/Model	额定值/Rating	重量/Weight(kg)	产品编码/Cat.-No.
AN768303	3P，弯连接 bended joints	3P660V100A	0.20	768303
AN768304	4P，弯连接 bended joints	4P660V100A	0.25	768304

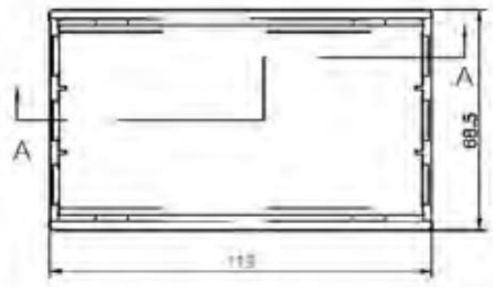
底部/Bottom

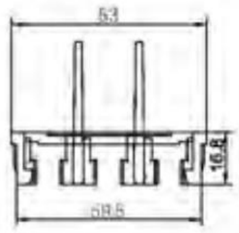
顶盖/Cover

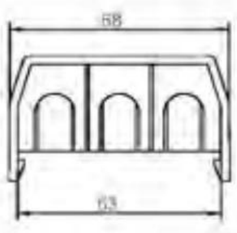


3P用

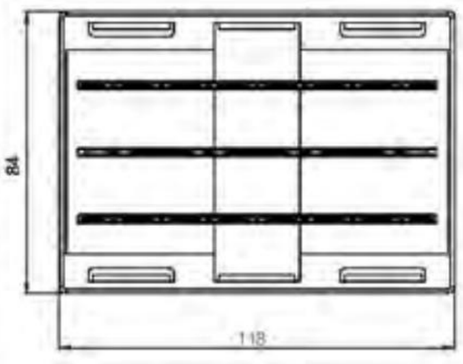


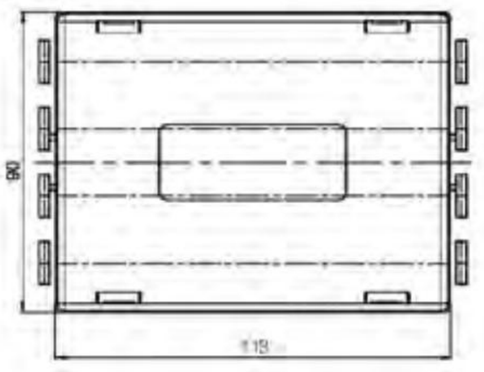


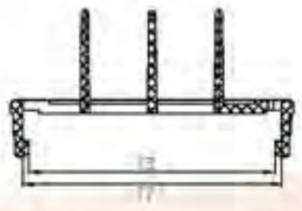


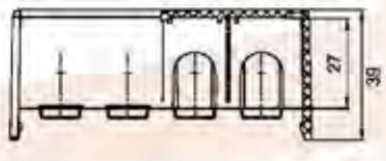


4P用





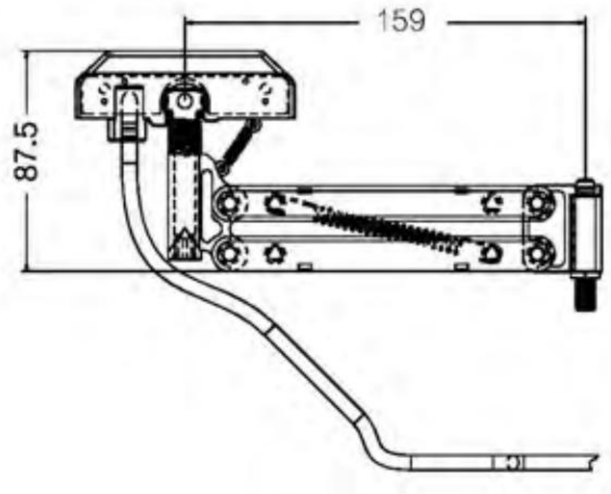


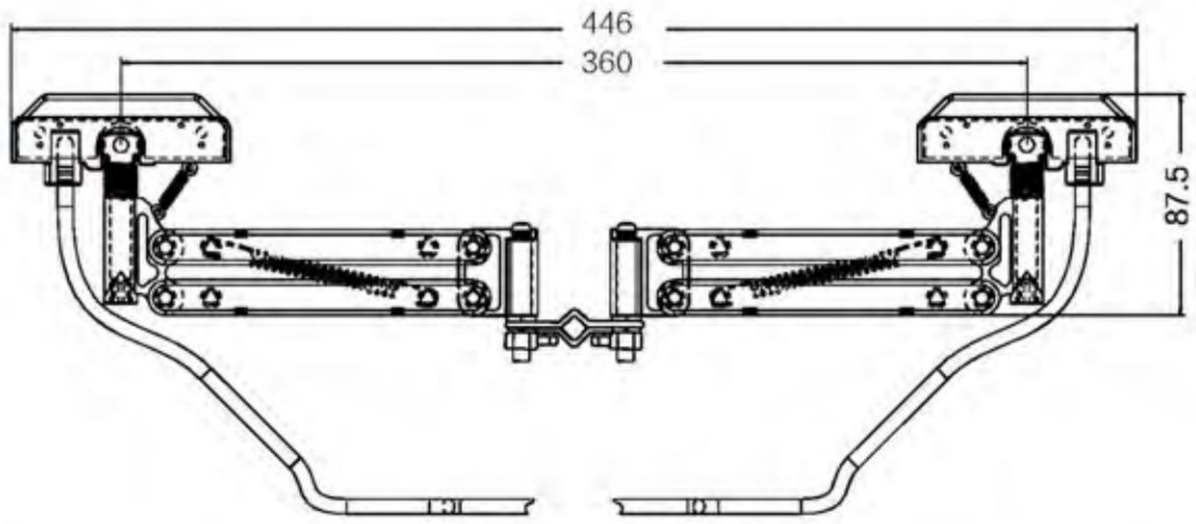


集电器/Collector

单集电器/Single collector AN769060

双集电器/Double collector AN769080





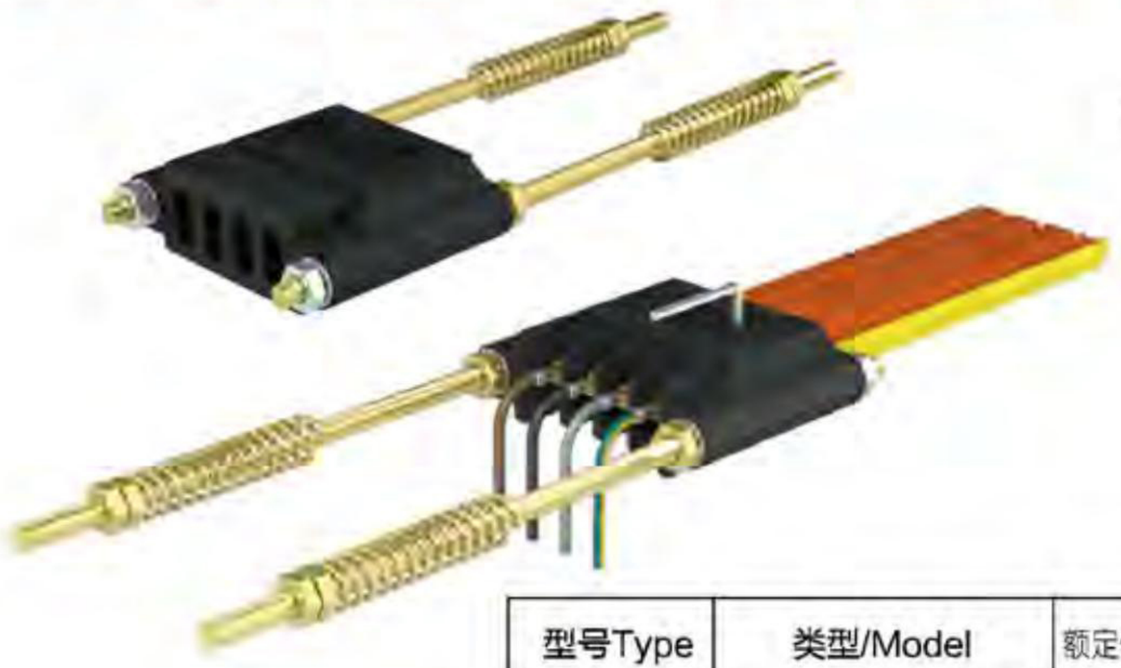
型号/Type	额定值/Rating	重量/Weight(kg)	材质/Material	产品编码/Cat.-No.	备注/Remark
AN769060	660V60A	0.17	工程塑料+碳刷 Plastic & Carbon	769060	相线/Phase
AN769065	660V60A	0.17	工程塑料+碳刷 Plastic & Carbon	769065	零线/ Neutral
AN769080	660V120A	0.34	工程塑料+碳刷 Plastic & Carbon	769080	相线/Phase
AN769085	660V120A	0.34	工程塑料+碳刷 Plastic & Carbon	769085	零线/ Neutral

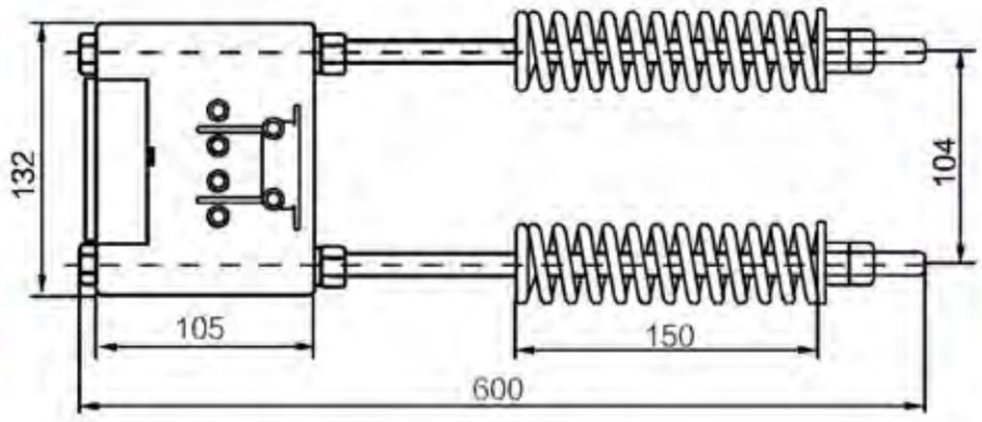
牵引底板/Towing Bracket

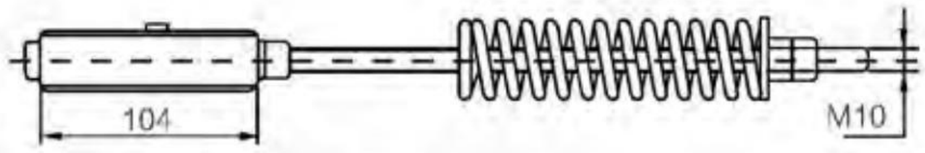
集电器安装示例
collector ready installed

型号/Type	类型/Model	重量/Weight(kg)	材质/Material	产品编码/Cat.-No.
AN769103	3P用	0.122	镀锌钢/Steel	769103
AN769104	4P用	0.168	镀锌钢/Steel	769104

拉紧器(端供)/End Tensioner(End Feeding)



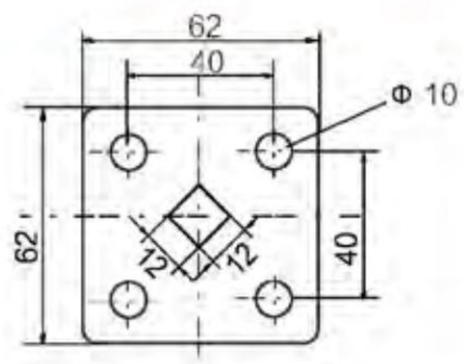




型号Type	类型/Model		额定值额定值/Rating	重量/Weight(kg)	产品编码/Cat.-No.	备注/Remark
AN768003	3P	不带馈电端子	3P660V120A	1.60	768003	1包装内各含1件; each one packed in one package
AN768013	3P	带有馈电端子	3P660V120A	1.95	768013	
AN768004	4P	不带馈电端子	4P660V120A	2.05	768004	1包装内各含1件; each one packed in one package
AN768014	4P	带有馈电端子	4P660V120A	2.25	768014	
AN768023	3P	不带馈电端子	3P660V140A	1.75	768023	1包装内各含1件; each one packed in one package
AN768033	3P	带有馈电端子	3P660V140A	2.10	768033	
AN768024	4P	不带馈电端子	4P660V140A	2.25	768024	1包装内各含1件; each one packed in one package
AN768034	4P	带有馈电端子	4P660V140A	2.45	768034	

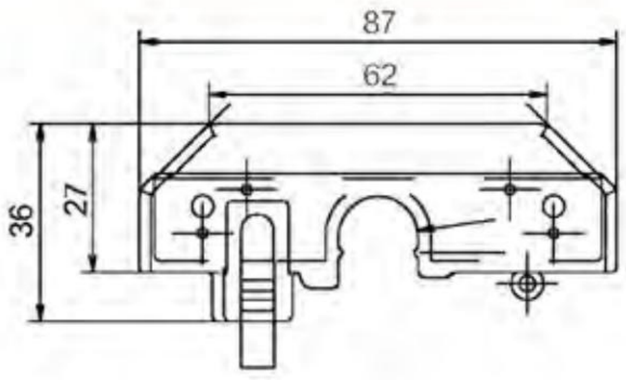
牵引方管/Towing Arm

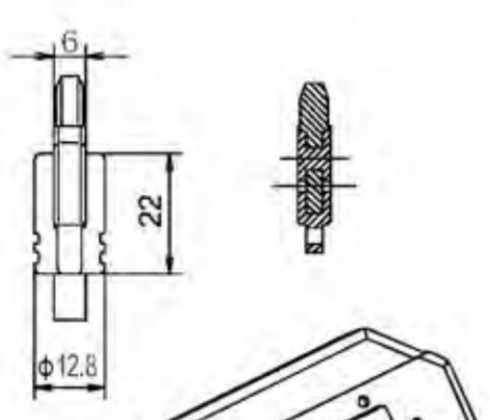
牵引方管安装示例
towing arm ready installed



型号/Type	类型/Model	重量/Weight(kg)	材质/Material	产品编码/Cat.-No.
AN769133	3P用	0.58	镀锌钢/Steel	769133
AN769144	4P用	0.65	镀锌钢/Steel	769144

电 刷/Carbon Brush





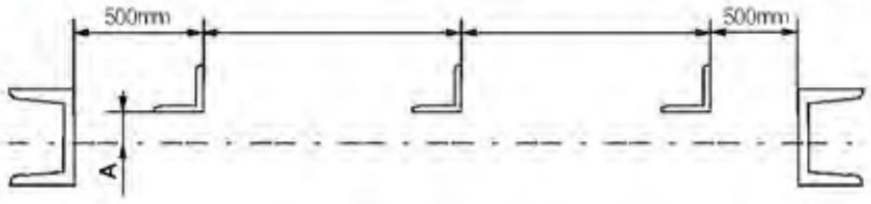
型号/Type	类型/Model	重量/Weight(kg)	材质/Material	产品编码/Cat.-No.	备注/Remark
AN769010	集电器用/For collector	0.075	工程塑料+碳刷 Plastic & Carbon	769010	相线/Phase
AN769015	集电器用/For collector	0.075	工程塑料+碳刷 Plastic & Carbon	769015	零线/ Neutral

安装技术参数/Installation Technical Parameters

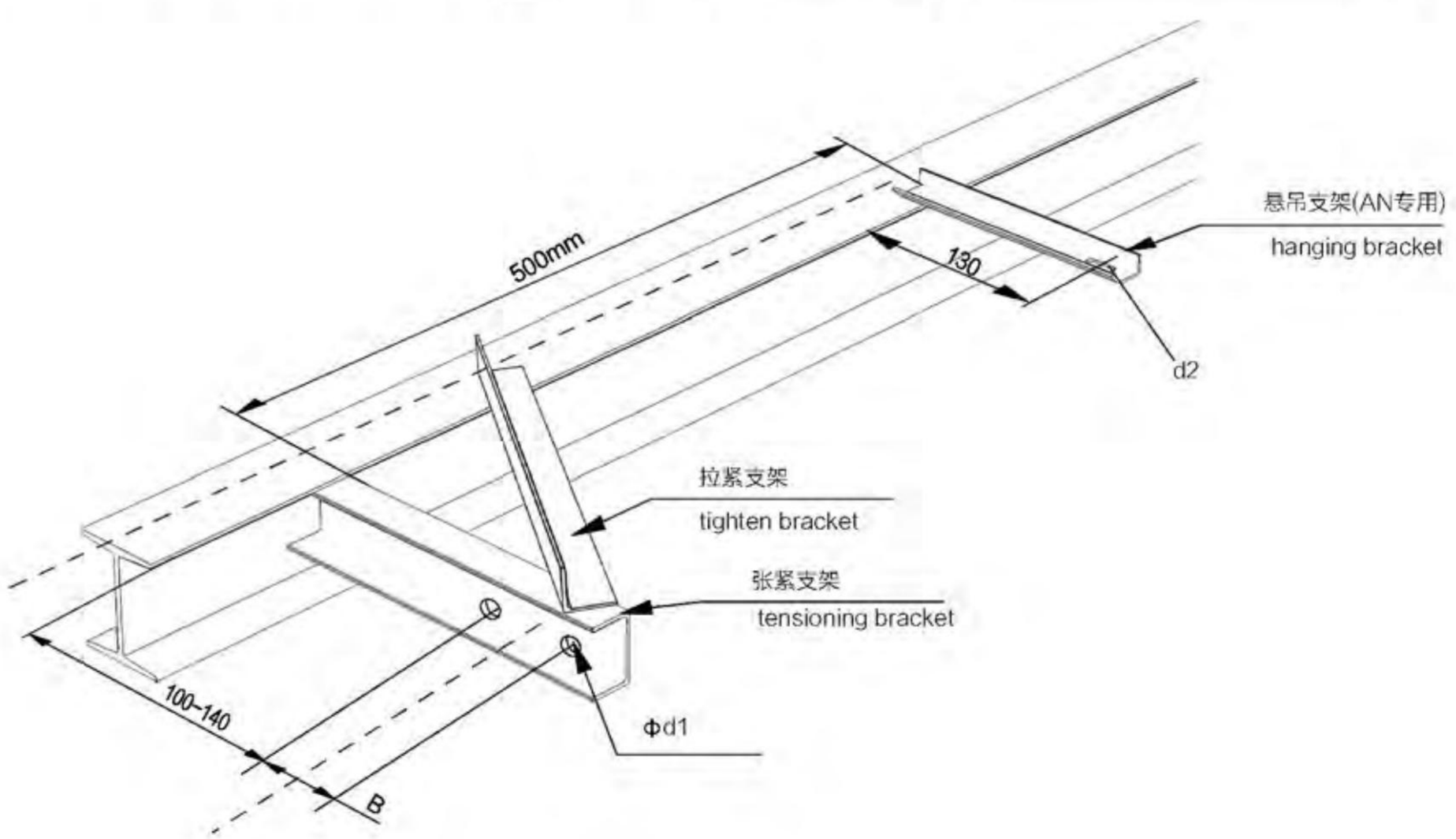
1 基本参数 Basic parameters

a 悬吊支架与拉紧支架的结构布局

The structure and layout of the hanging bracket and tighten bracket



应用范围 Appilcation Range	A=20

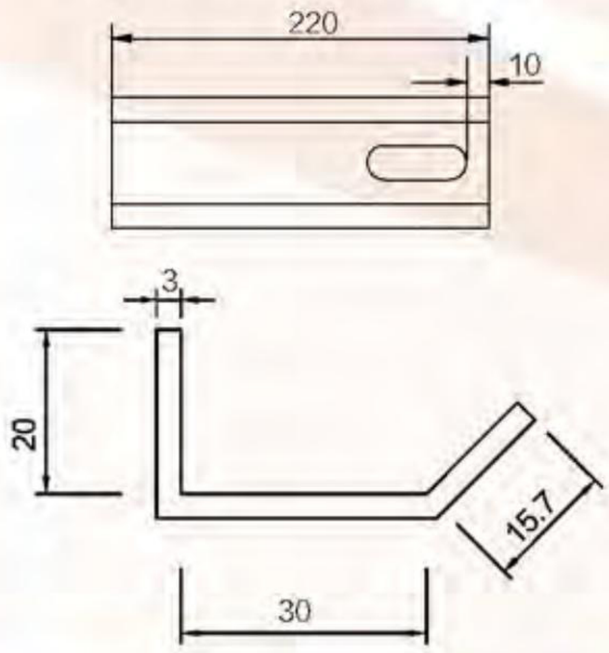


滑线形式/Model	B	C	d1	d2
3P	84	130	11	10.5×30
4P	104	130	11	10.5×30
6P(3P+3P)	182	130	11	10.5×30

安装间距 installation distance	标准悬吊距离1.2m，最大不超过2m standard distance 1.2m , max.distance 2m	
支架制作 type of support bracket	张紧支架 tensioning bracket	[-80 或 [-100
	中间支架 hanging bracket	AN专用支架,L-220 tailored support bracket

AN专用支架

Tailored Support Bracket



型号/Type	类型/Model	重量/Weight(kg)	材质/Material	产品编码/Cat.-No.
AN769303	3P,L=200 mm	3.00	镀锌钢/Steel	769303
AN769304	3P,L=220 mm	3.20	镀锌钢/Steel	769304

吊夹的安装/Hanger installation

吊夹安装可正面安装或侧面安装。

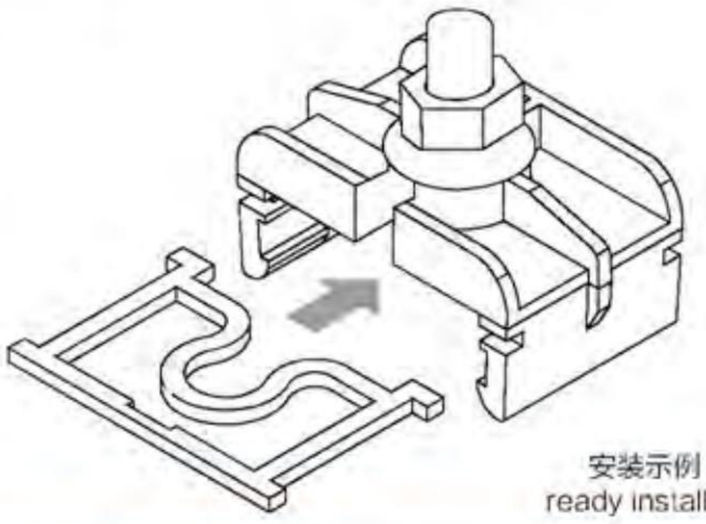
a 侧面安装：将吊夹从滑线的首端平移插套入滑触线，并平移至支架安装孔位置。

b 正面安装：将吊夹主体 45° 角从滑触线上端套入，将固定片插入吊夹主体槽内，拆卸时先用尖嘴钳或螺丝刀取出滑触线固定片即可轻松将吊夹主体从滑触线上端取出。

Hanger can be front or side installation.

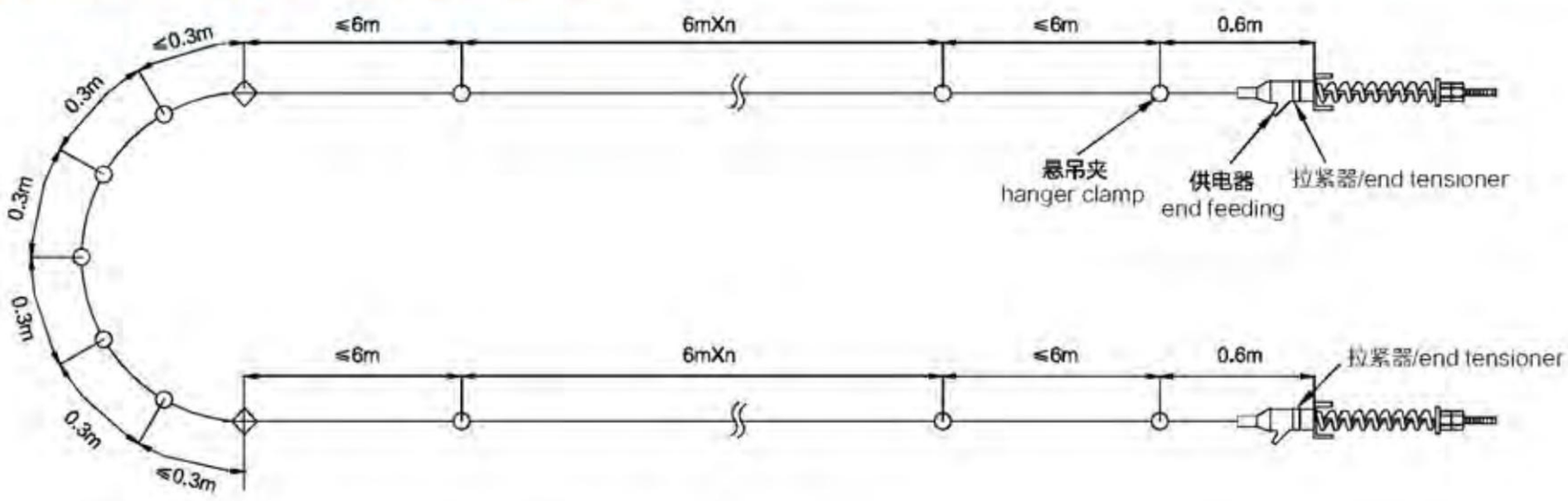
a: Side installation:Insert the tabs into the hanger body, position the hanger from the first end of the conductor rail moving to the correct position.

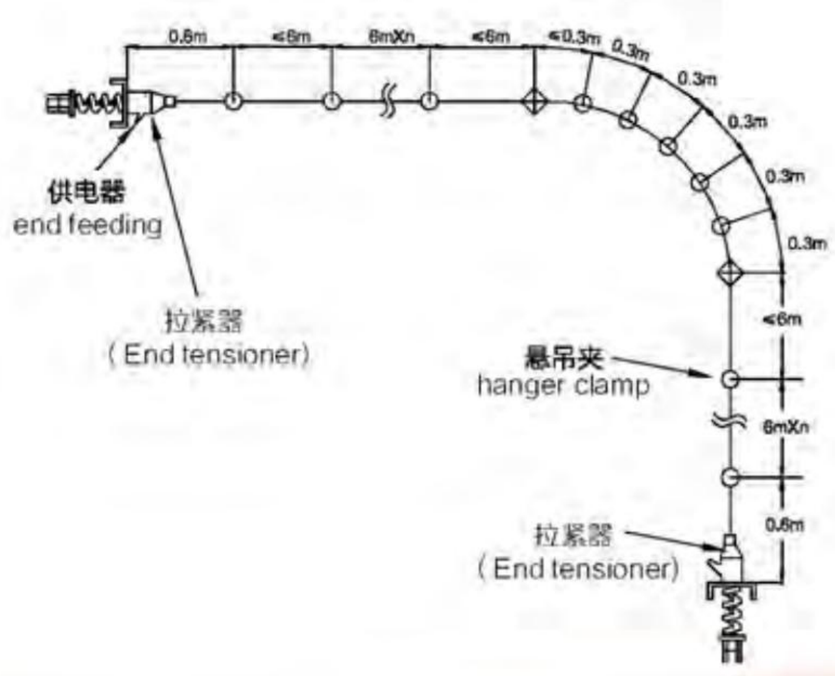
b: Front installation: Iset into the hanger body from the top of the conductor rail via 45° angle, Insert the tabs into the hanger body slot, when removal,take out the tabs by needle-nose pliers or a screwdriver first, then the hanger body can be removed from the conductor rail.



安装示例
ready installed

特殊安装形式举例/Special installation





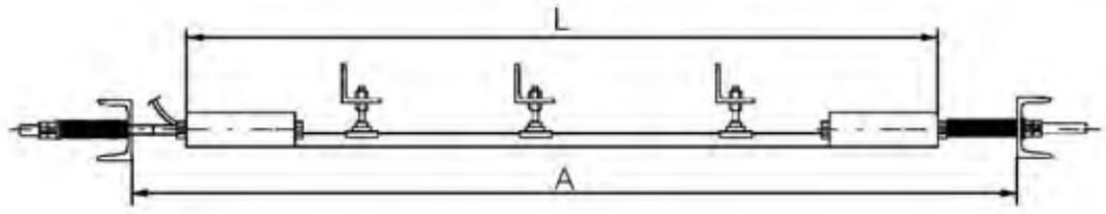
拉紧器(端供)的安装/Installation of End Tensioner (End Feeding)

安装重要提示/Important notes of the installation

a 安装准备工作/Ready to Install

按运行距离确定两张紧支架之间距离如图所示

Determine the running distance between two tight brackets as shown in Figure.



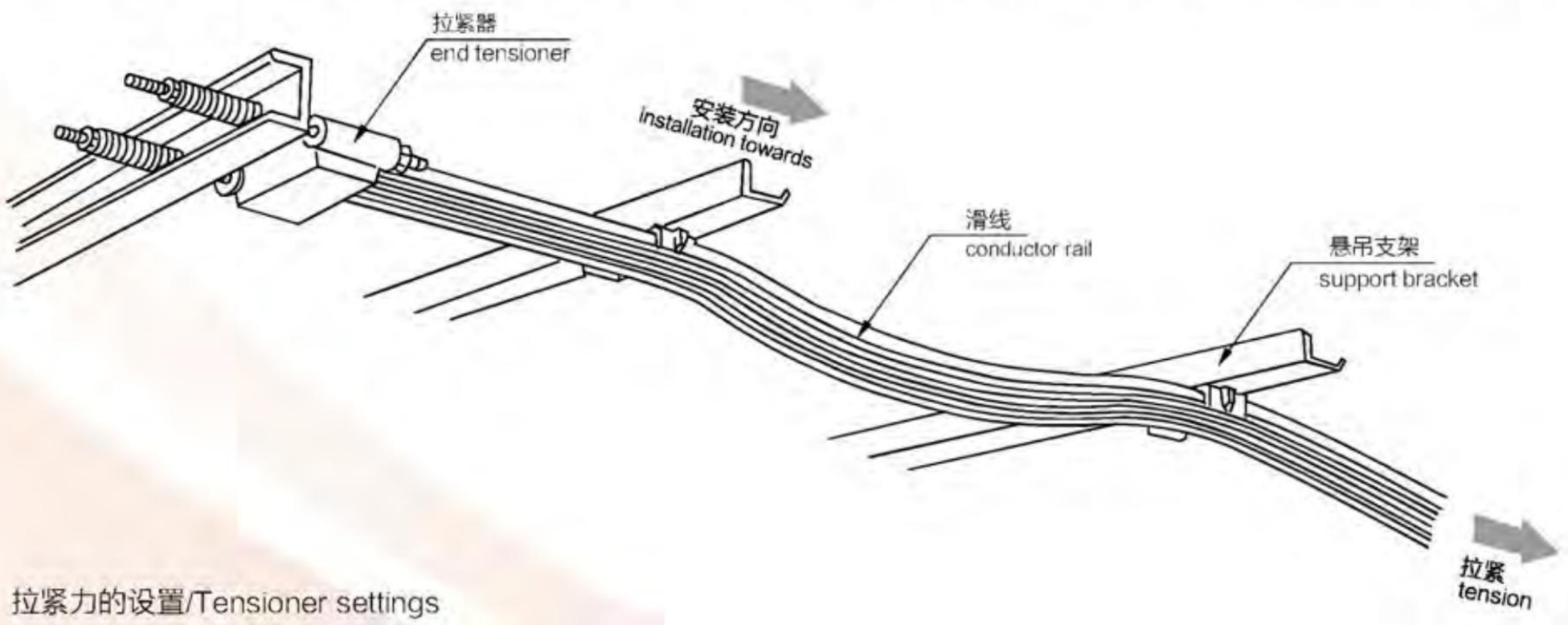
张紧支架间距 L tensioning bracket distance	A−500 mm

b 将滑线直接穿进拉紧器，用螺钉并紧即可

Put the conductor rail right through the tensioner, screws and tighten it.

c 将一端拉紧器安装好后，用绳子一段段挂起滑线，然后压进悬吊拉紧

After tensioner installed on the one end, hang the conductor rail on with a rope, and then pressed into the hanger and tighten.



拉紧力的设置/Tensioner settings

拉紧力的大小与温度有关，其大小应保证能吸收因温度改变而引起的滑线长度变化。为方便调节按下式进行计算来确定压紧后的弹簧长度a。

The size of the tension is related to temperature, and its size should be guaranteed to absorb the change of the conductor rail length which leaded to when the temperature change. For conveniencen of the adjustment,should calculate to determine the length of the spring after compressing.

$a=140+16.6\times10^{3}\times(T+10)\times L\pm15$ mm

T:安装时环境温度/environmental temperature when install,　℃

L:滑线有效长度/effective length of the conductor rail　m

滑线有有效长度：当两端加弹簧时，为总长的1/2。

effective length of the conductor rail: 1/2 of the total length,when install spring on the ends.

连接盒（中间供电器）的安装/Installation of Jointing Box (Line Feeding)

弯连接接头方式的安装

The installation of the bend connectors

将外壳剥离30mm，用老虎钳将铜带折弯90°，插入连接盒并紧螺钉。本连接盒可作供电器用。

Shell stripped 30mm, bend the Copperbelt 90° via pliers, insert it into the jointing box and tighten the screws. The jointing box can be used for power supply.

Fig.1

将需要连接的滑触线剥离外壳后，将铜条穿入专用接头内，再 90 度折弯，折弯的标准高度为 3cm，再拧紧螺丝。如需要供电，将电缆连接插件直接拧在如图所示的螺丝上即可，再在连接盒顶盖钻眼，装上电缆防水接头，从防水接头处将电缆引出。

注意：螺丝必须充分拧紧。

After stipping the conductor rail shell which need to connect,to insert the copper strips into dedicated joint, and then 90 degrees bending, bending of the standard 3cm in height and be limited to 3.5cm, and then tighten the screws. If power needed, screw the connect cable joint directly on the screw as shown in Figure,then drill on the top of the jointing box cover, and install waterproof cable connector,drag the lead out cable out of the waterproof joints.

Tip: The screws must be fully tightened.

Fig.2

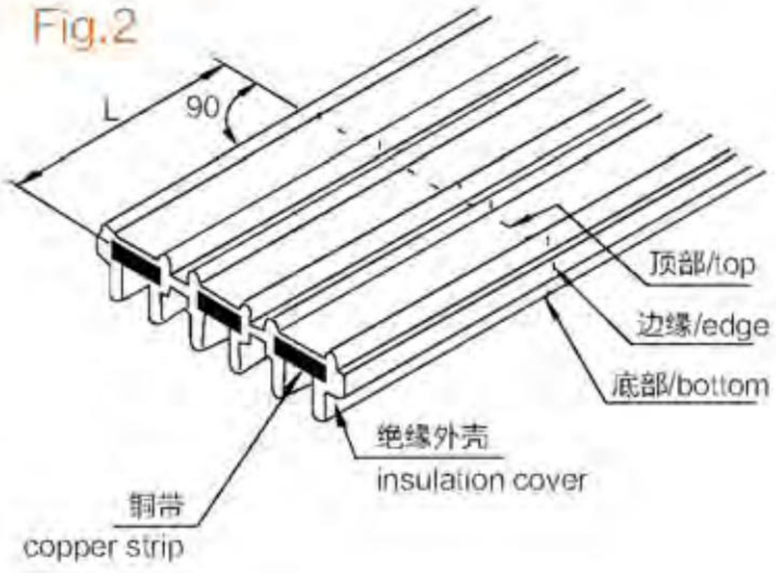


Fig.3

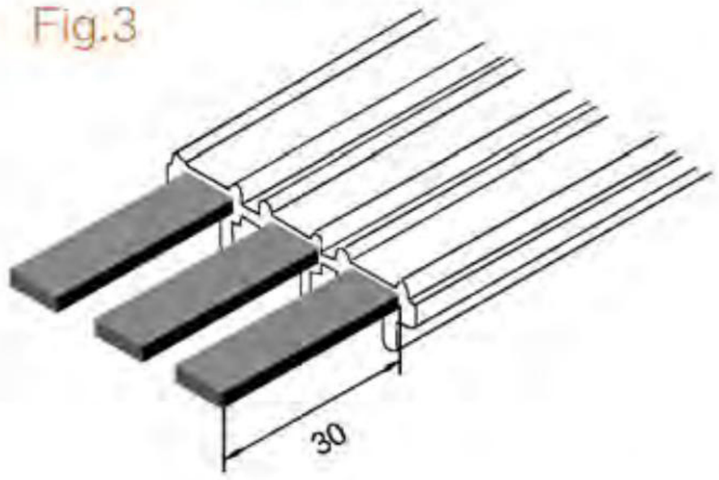


Fig.4

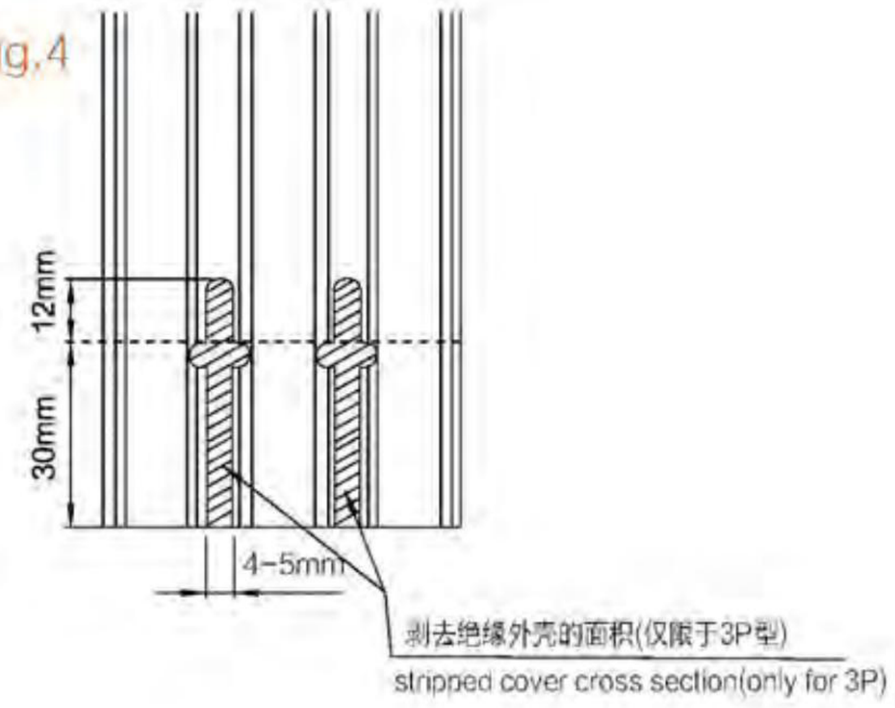
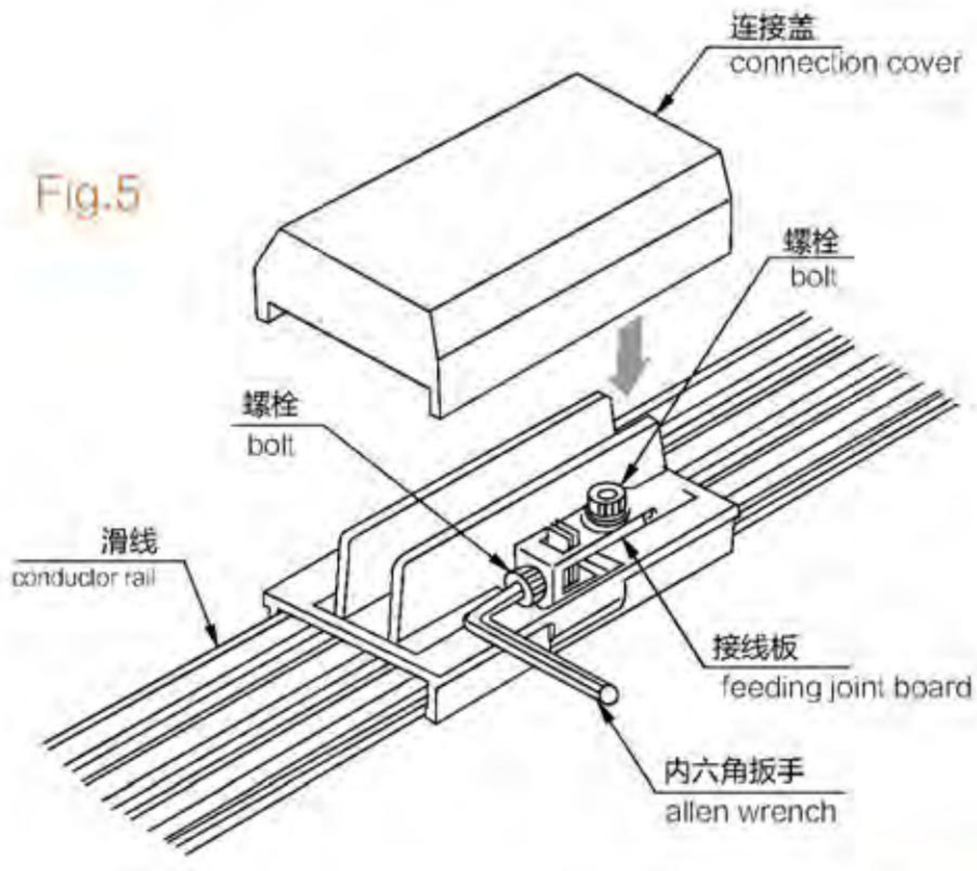


Fig.5



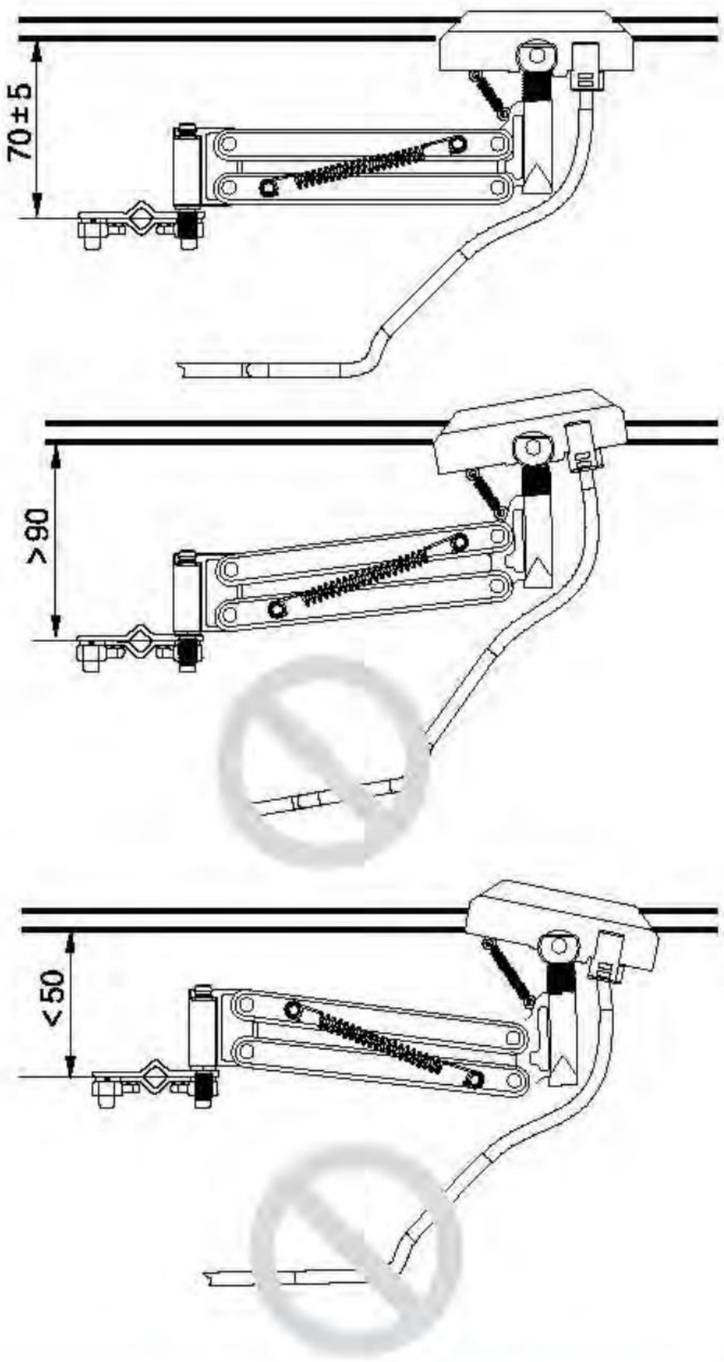
集电器的安装/Installation of Collector

a 集电器安装：根据安装空间，确定牵引器和钢梁的位置，集电器的安装高度尺寸定位——牵引器上沿与滑线下沿保持 70±5mm 的距离为宜，集电器安装时支撑臂横杆与滑线平行(参考右侧示意图)。

b 复检：检查滑线与集电器的运行轨道的平行度，要求在 ±20mm 变动为正常，当试运行时重点观察集电器碳刷片通过的平行度，发现问题当场解决，拧紧所有紧固件，连续运行一个月后。所有紧固件再拧紧一次。

a. The installation of the current collector: Dedine the length of the tractor unit according to the amount of electrode and installation space. 70±5mm distance should be ensured in distance between the upper end and down end of the conductor rail,it is only natural that support arm parallel to the slip line when the collector installed.(refer to the installation drawing of the conductor rail for more detail).

b. Inspection: Inspect the depth of parallelism between the conductor rail and operation guide of the hoisting unit and control the depth within 20mm, make a test run and check the running state of the flake passing through each nodal point,tighten all the fastening piece if some problems occurs,dry run one month without interval and tighten all fastening pieces again.



安装维护注意事项/Installation and maintenance

按集电器的安装尺寸确定安装方位，进行安装。

To find the installation path according to the collector size for installation.

如有必要应加毛刷对铜带进行除尘。

If necessary,dust removal for the copperbelt by brush.

其他注意事项 /Other Considerations

▲各件安装完毕，通电试运行不少于 10min，并检查各处运行情况；尤其是检查各集电器的工作位置，保证在有效调整范围内。

▲运行满一个月后，检查各件的运行情况，有必要时将各紧固件拧紧一次；

▲在集电器安装过程中，若不易确定安装尺寸时，可使集电器横杆与滑线保持平行达到安装要求。

▲拉紧器弹簧不得压得过紧，需要给滑线留有热胀冷缩的余地，应遵循“ 夏松冬紧 ”的原则，一般肉眼判断为拉紧器弹簧调整到滑线有轻微变形时为准(再将弹簧稍微松开些)。

▲To test run not less than 10min after installation done, and check throughout the operation.

▲Run for a month, to check the operation of each piece, if necessary, tighten each fasteners.

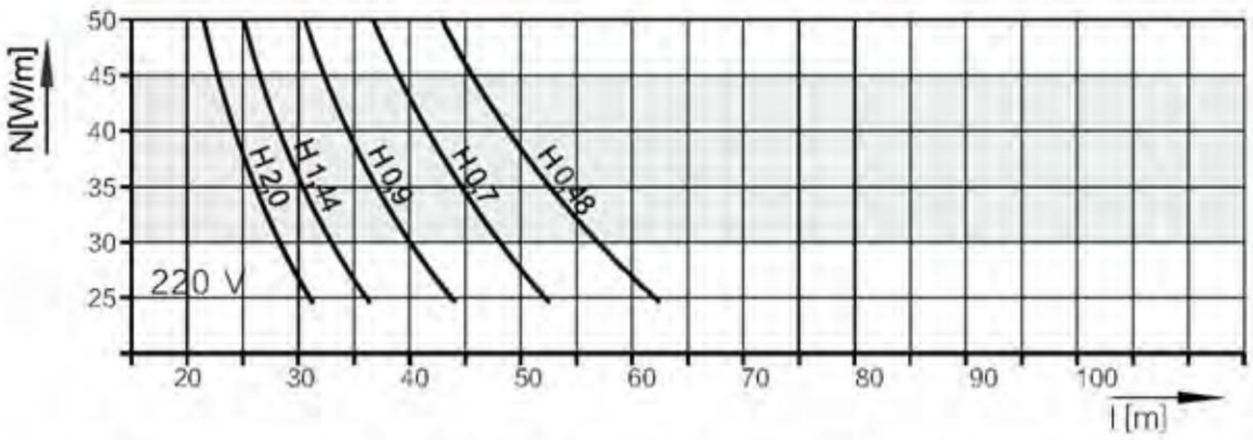
Especially to check the operating position of the collector, to ensure it's within the effective adjustment range.

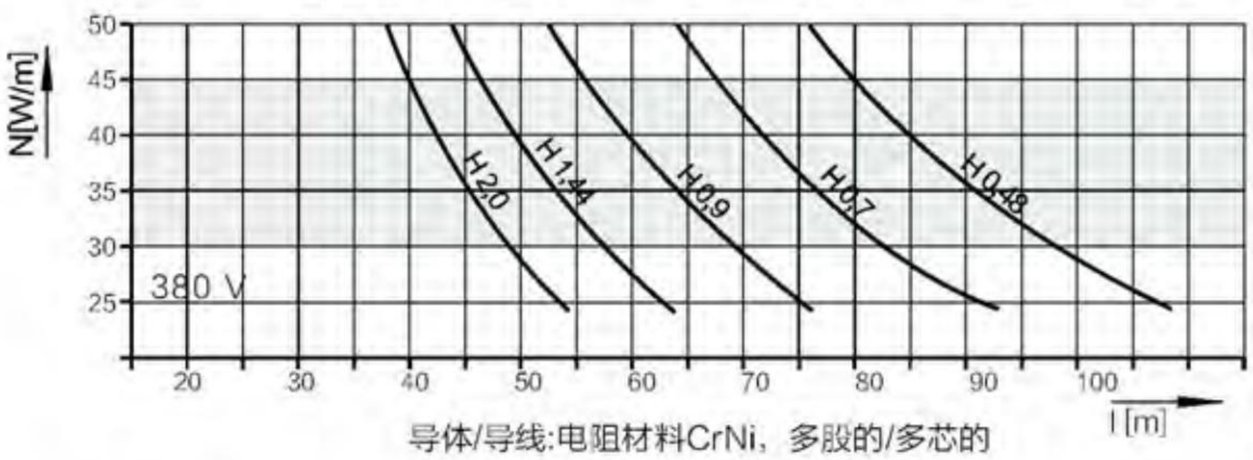
▲If it' s hard to determine the installed size of the collector when installation,the collector rail should be paralleled to the conductor rail in order to meet the requirement of the installation.

▲Tensioner spring shall not be overextended and need to leave room for expands with heat and contracts with cold of the conductor systems, It should follow the principle of "loose in Summer and tight in Winter",

Generally it will be subject to that the tensioner spring adjust until a slight deformation appeared on the conductor rail when determine via unaided eye (and then loosen the spring slightly).

加热电缆的选择: SELECTION OF HEATING CABLE





导体/导线:电阻材料CrNi，多股的/多芯的

确定一条容量在 30 到 45 瓦特 / 米的电缆。
Determine a heating cable of 30 to 45 W/m capacity.

如果在左侧的图表中找不到合适的结果，那么就把系统长度分割成两个或更多个加热部分。
If no suitable result from adjacent diagrams, devide the length of the system into two or more heating sections.

假如加热部分长度更短，就通过一个变压器来提供较低的电压。
Supply lower voltage via a transformer in case of shorter heating sections.

加热容量[瓦特/米 Watt/m] Heating capacity $:N' = \frac{U^2}{R \cdot L^2}$

U = 电源电压(伏特) Supply voltage (Volt)

R = 加热电缆的电阻(欧姆/米) Resistance of heating cable (Ohm/m)

L = 加热部分的长度(米) Length of heating sections (m)

导线电阻数据/ Wire Resistance data

加热电缆heating cable: H 0.48 → 0.48 Ohm/m
加热电缆heating cable: H 0.70 → 0.70 Ohm/m
加热电缆heating cable: H 0.90 → 1.00 Ohm/m
加热电缆heating cable: H 1.44 → 1.44 Ohm/m
加热电缆heating cable: H 2.00 → 2.00 Ohm/m

容许偏差/Tolerance: ± 2.5%

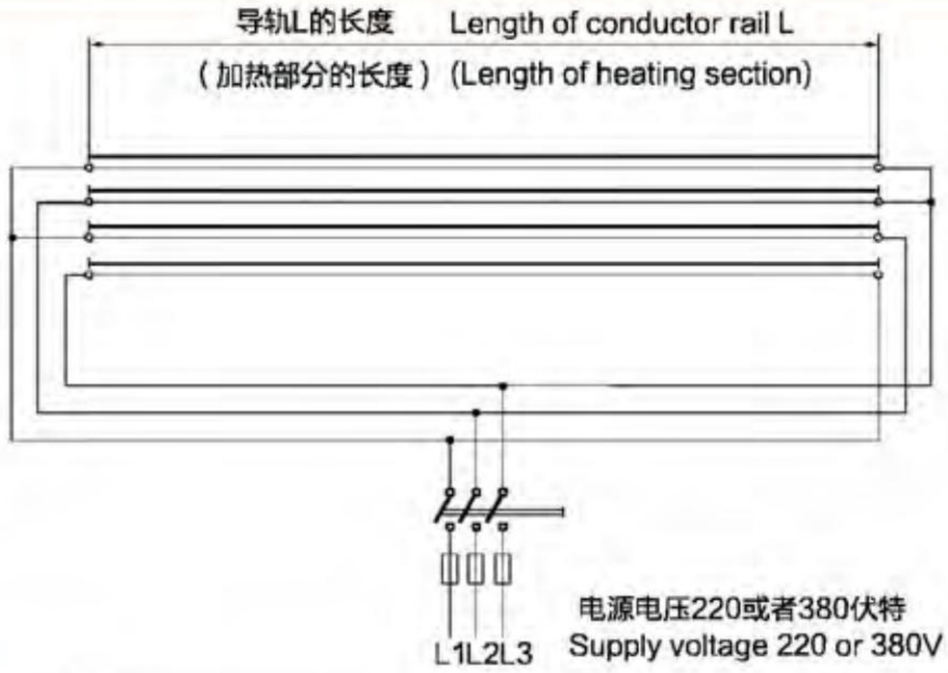
外径/Outside diameter: ca. 4 mm

加热电缆的组成:
Composition of heating cable:

滑线：电阻材料CrNi, 多股的/多芯的
绝缘材料：特氟龙，本色，玻璃丝外壳
外壳V2A导线

Conductor: resistor material CrNi, stranded
Insulation: TFE-(Teflon-)insulation, natural colour,glass silk sheath
Sheath: V2A wire

加热系统“一个部分”的图解
Scheme of heating system for one section



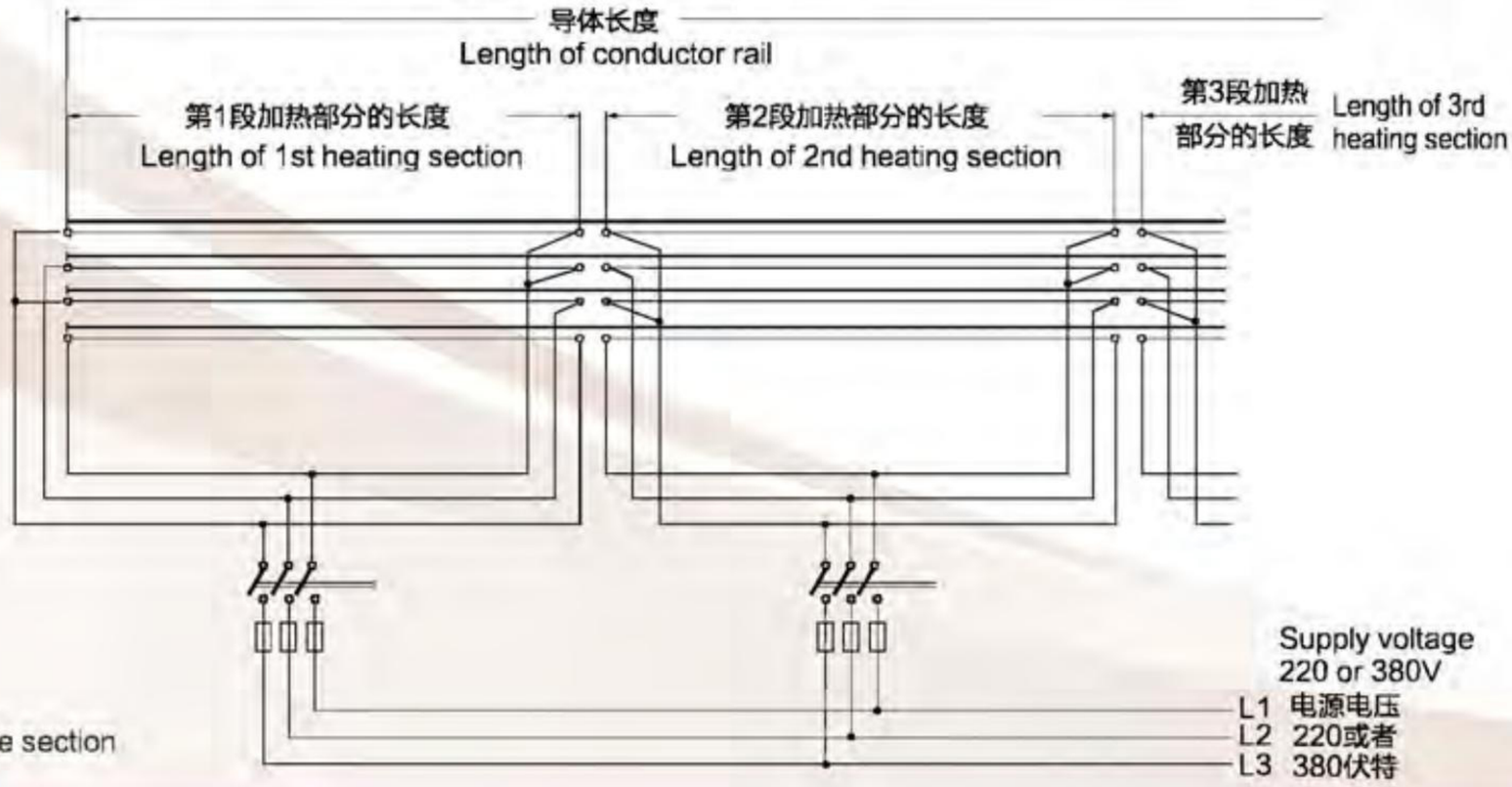
符号 Symbols:

导体（滑线）
Conductor rail

带有终端夹的加热电缆
Heating cable with terminal clamp

绝缘电缆的连接，
NSYAF2.5平方毫米
Connection of insulated conductor cable NSYAF 2.5mm²

加热系统“一个以上部分”的图解
Scheme of heating system for more than one section



KNCRANES

询价表/INQUIRY SHEET

客户/customer _____ 联系人/attention of _____

地址/address _____

电话/telephone _____ 传真/telefax _____

电邮/E-mail _____ 网址/internet _____

1. 起重机或设备的型号 /Type of crane/machine to be electrified _____

2. 电压/Voltage _____ V AC-DC: _____ 相位/Phases _____

3. 滑触线系统长度/Length of conductor system _____

4. 供电系统数量/Number of power conductors: _____ 动力线（控制线）/control lines: _____

地线/ground: _____ 零线 /neutral: _____

5. 室内/Indoor ☐ 室外/Outdoor ☐

6. 特殊环境要求（湿度、粉尘、化学影响等）/Special site conditions (humidity, dust, chemical influences etc.)

_____

7. 环境温度/ Temperature conditions _____℃ min. _____℃ max.

8. 一个系统内的起重机或设备数量/Number of cranes/machines supplied by the one system _____

9. 每台起重机或设备的承载电流/Ampere load of each crane/machine _____

（使用下页附表）(use table on page 145)

10. 允许的电压降/Permissible voltage drop _____

11. 供电点数量及位置/Number and position of feed points* _____

12. 分段数量及位置/Number and position of isolating sections* _____

13. 设定的安装位置/Installation position envisaged* _____

14. 支架要求/Brackets required _____

15. 最大运行速度/Max. travelling speed of machinery _____

16. 其它相关数据/Other important data: _____

_____

_____

*为了正确及时的供货,请提供打印图纸或草图.
Please submit prints or sketches, also for curved tracks.