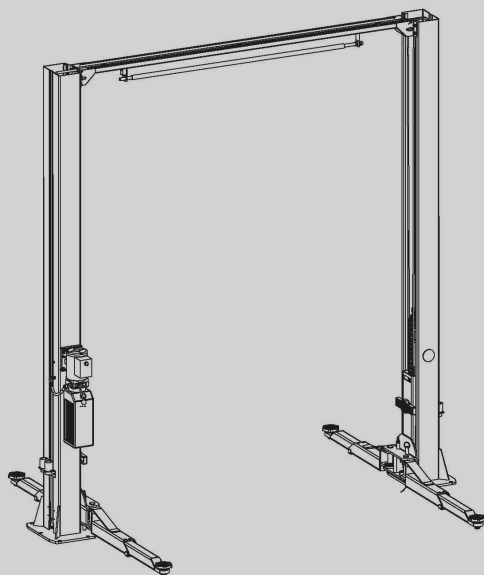




4 吨双边手动解锁龙门举升机
4T 2 Post Lift Clear Floor

AE5105/AE5105-3



使用说明书 \ User's Manual



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第一章 安全注意事项

- 当您使用举升机时，必须保证您已经完全阅读了此说明书，包括安装，操作，安全等相关内容。
- 发现举升机有任何异常问题，停止使用。
- 不要超载使用举升机，本产品额定负载 4000KG。
- 当车辆准备开往上车位置前，先将四个托臂摆开，保证车辆通道没有任何障碍，不要用脚踹托臂，这样会损坏托臂齿。
- 只有接受过培训的人才可以操作举升机，禁止让汽车客户或者没有操作经验的人随意操作举升机。
- 举升机托臂的橡胶托盘必须与车辆的支撑点接触，否则会损坏车辆底盘。（不清楚支撑点位置的情况下，建议电话咨询车辆生产厂家）
- 举升车辆前，必须确保所有托臂齿成功啮合。
- 必须使用 4 个托臂同时举升汽车，禁止使用少于 4 个托臂举升汽车。
- 当举升完汽车后，必须执行机械落锁动作，禁止在没有机械落锁的情况下，在车辆下方工作。
- 当需要拆装汽车部件或者需要前后推动车辆时，车辆重心会偏离，为了保证安全，需要使用四个独立的支架来加强车辆稳定性
- 举升机周边必须干净，整洁，任何油污等障碍物都是安全隐患。
- 禁止在车内有人员的情况下将车辆举起。
- 下降车辆前，确保下方没有任何障碍物。
- 车辆驶出举升机前，先将托臂摆回初始位置，确保不会与车辆干涉。
- 在液压系统有压力的情况下，禁止拆卸任何液压件。
- 不要将手放入任何危险的点，例如保险块，钢丝绳，滑台与立柱间隙，链条，电气连接点等。
- 本产品只适用在室内，禁止在室外使用。
- 短托臂安装在前方，长托臂安装在后方。（一般汽车前置发动机）
- 保险绳必须牢固，当拉动保险手柄时，主副立柱保险块必须同时完全同步打开。
- 操作人员必须穿戴安全鞋操作举升机。
- 整机质保一年。

第二章 产品特性和参数

2.1 产品特点

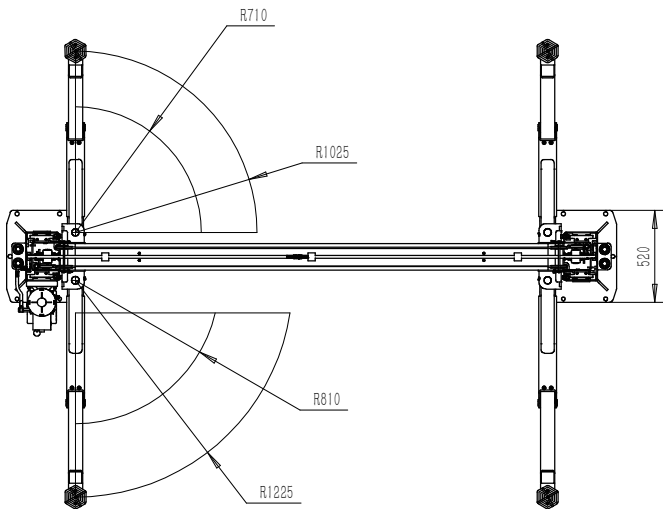
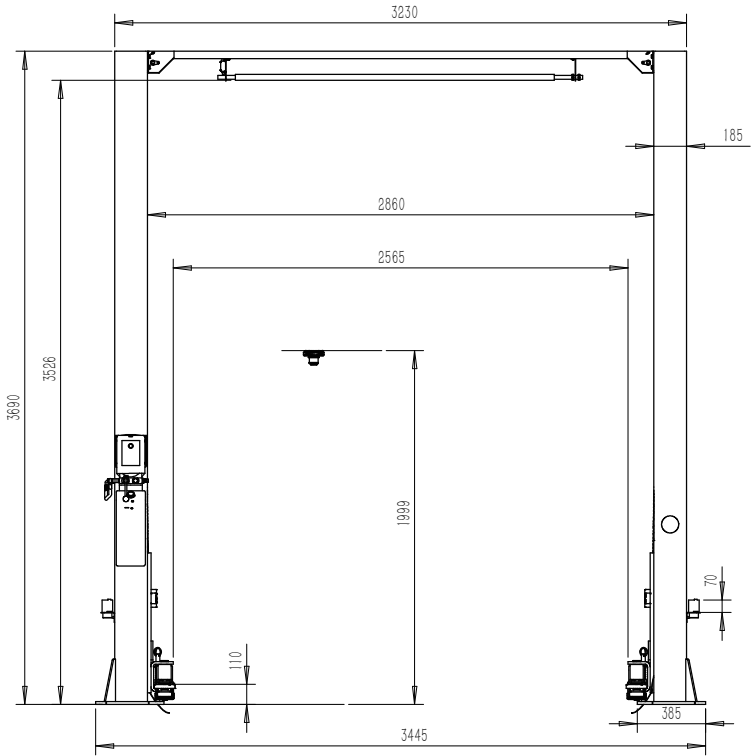
- 2 节托臂设计, 适应车型广泛
- 双边手动解锁, 安全可靠
- 托盘高度螺纹调节, 可调高度 70mm
- 最低举升高度 110mm, 适应低底盘汽车

2.2 产品技术参数:

额定举升重量		4000KG
立柱内宽		2860mm
整机高度		3690mm
举升最低高度		110mm
托盘调节高度		70mm
举升最高高度		1999mm
二节短托臂伸缩范围		710mm-1025mm
二节长托臂伸缩范围		810mm-1225mm
电源	AE5105	1PH,220VAC,2.2KW, 铁壳电机
	AE5105-3	3PH,380VAC,2.2KW, 铁壳电机
液压油类型		46# 抗磨液压油



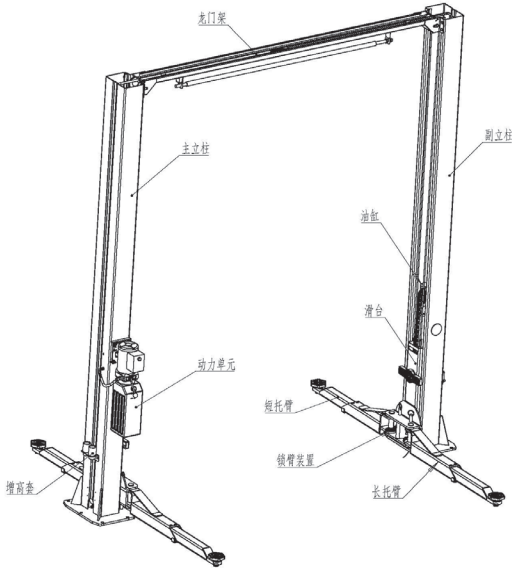
产品示意图 (单位: mm)





主要部件简介：

- 本机主要由主立柱，副立柱，滑台，托臂，锁臂装置，托臂锁，机械锁，油缸，动力单元，龙门架等组成。
(看下图)



立柱：基础部件，用于安装滑台，油缸等驱动装置

滑台：举升部件，装在立柱内，上下滑动

托臂：举升部件，与滑台安装在一起，与汽车支撑点接触，举升汽车

锁臂装置：安全部件，锁止托臂，使其无法转动

机械锁：安全部件，油压泄油，保险块上顶保险条，滑台静止

油缸：传动部件，液压站工作，将高压油打入油缸下腔，活塞杆上升，带动滑台上升

动力单元：动力部件，电机工作，带动泵工作，通过过滤网吸油，推出高压油

龙门架：过桥部件，平衡钢丝绳，油管，保险绳通过龙门架从主立柱到副立柱，同时减轻了两立柱的内倾

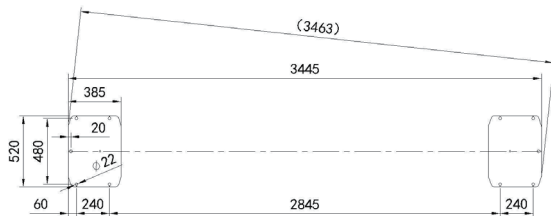
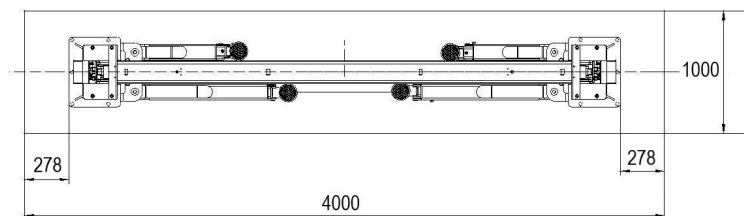
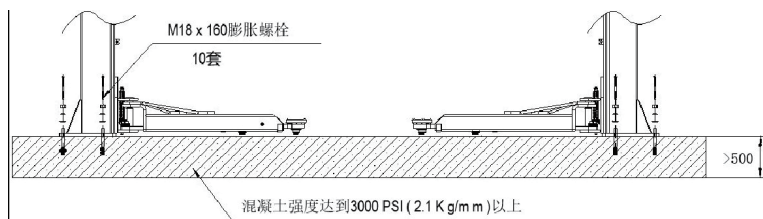
第三章 安装准备

3.1 拆卸包装

- 将包装箱拆开，去掉周围的包装材料，检查机器有无在运输中受损，对照装箱单检查主、配件件是否齐全。将包装材料远离儿童放置，以免造成危险；若包装材料会造成污染，应将其妥善处理。

3.2 地基

- 用户有责任确保地基的稳固，混凝土的最小厚度为 500mm，最小强度为 21MPa，混凝土必须在安装日 15 天之前完成。与膨胀螺栓相距 350mm 内不允许有其它任何地基设备以免破坏地基强度。用户有责任提供安全的电源，气源，以及电源连接线等连通部件。



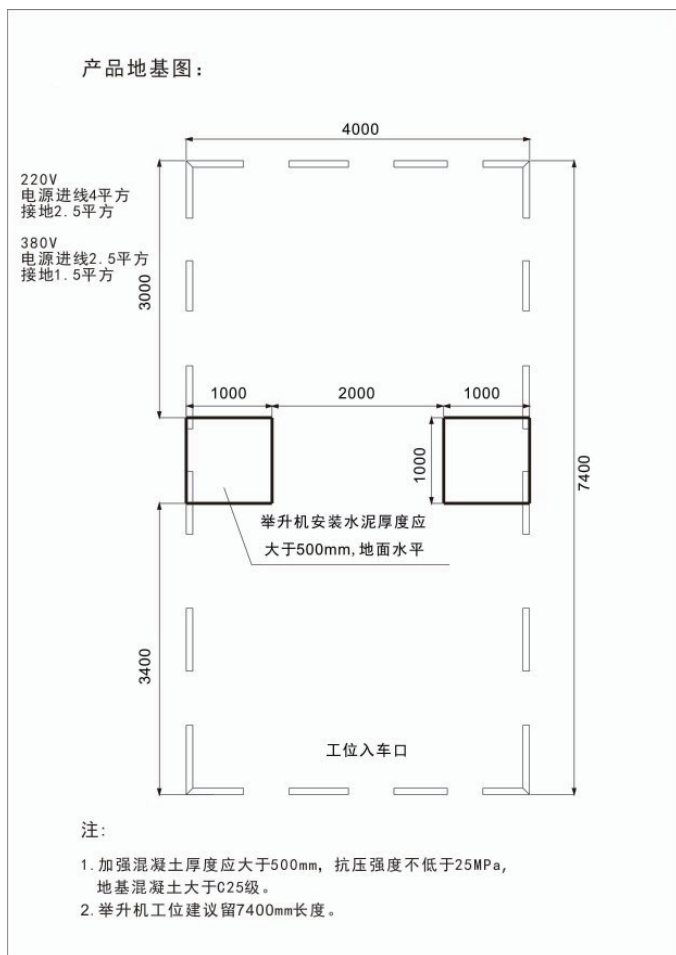
膨胀螺栓固定空位图

工具

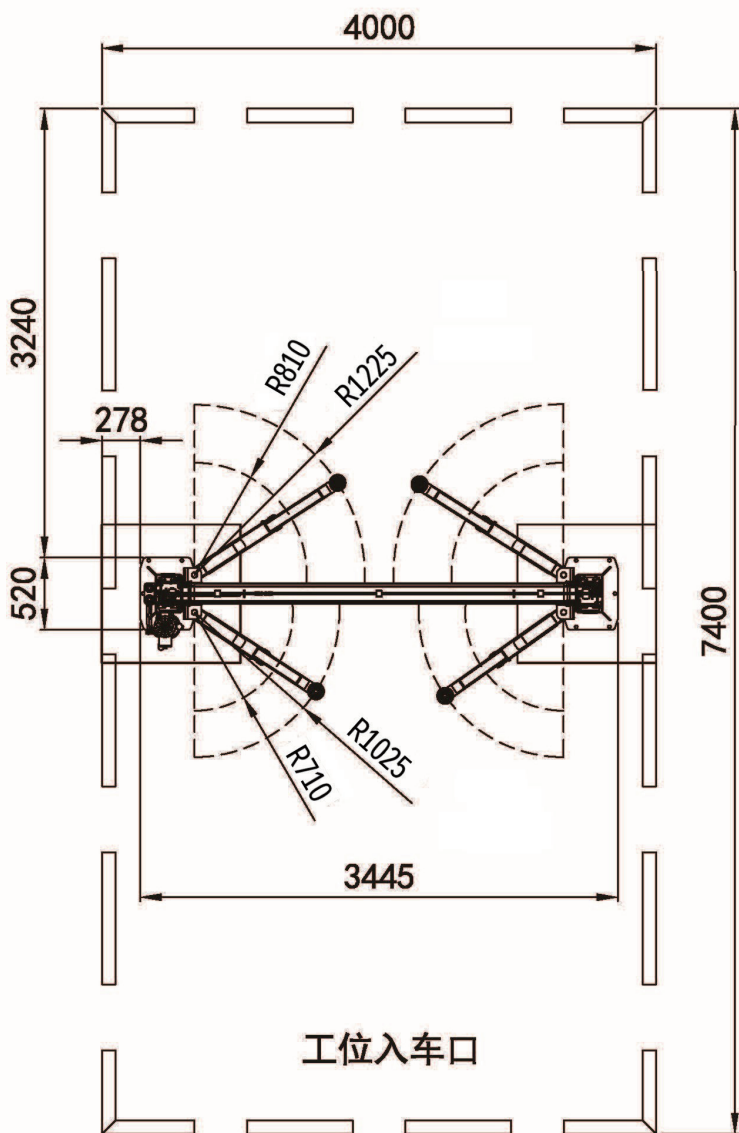
- 5m 卷尺
- 石粉笔
- 合适的冲击钻和钻头（膨胀螺栓 M18X160mm）
- 锤子
- 合适的扳手
- 1.2m 的水平尺
- 撬棍
- 4m 高扶梯
- 合适的螺丝刀
- 100mmx100mm 的木砌（用于平放立柱，保护油漆表面）

第四章 安装指导

- 首先选择好要安装的区域，尽量靠墙，离电源近的地方
- 清理干净安装举升机区域，地面不可以有任何油污
- 产品安装空间尺寸图供参考

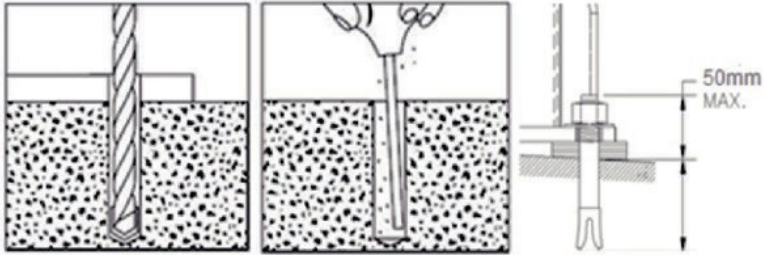


空间示意图





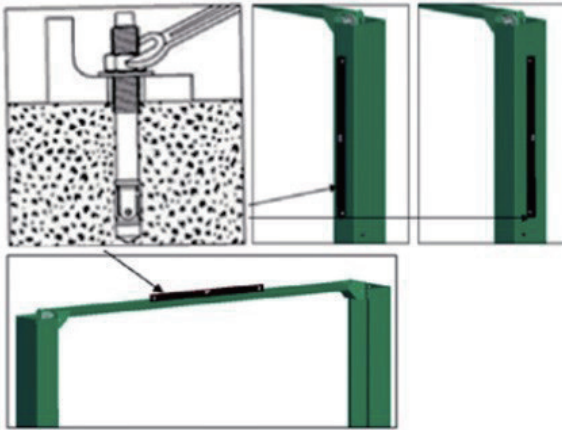
- 将主立柱放置好，用冲击钻打孔，将螺栓孔内残余的灰尘用吸尘器清理干净，用锤子将膨胀螺栓敲入孔内，膨胀螺栓露出地面高度不可大于 50mm，螺母不要拧紧。



- 将副立柱固定，方法参照主立柱，同时确认两立柱底板对角线距离差在 3mm 以内。
- 两边立柱各准备好扶梯推车，用吊带拴好龙门架两边，将龙门架吊起，固定好连接螺栓。

注意：安装龙门架时，举升机周围不可以有其他人员。

- 拧紧膨胀螺栓（参考扭力 203N.m），同时用水平尺确认立柱的垂直，如有必要，用垫片塞入立柱底部，调整水平，龙门架上表面也用水平尺确保水平。

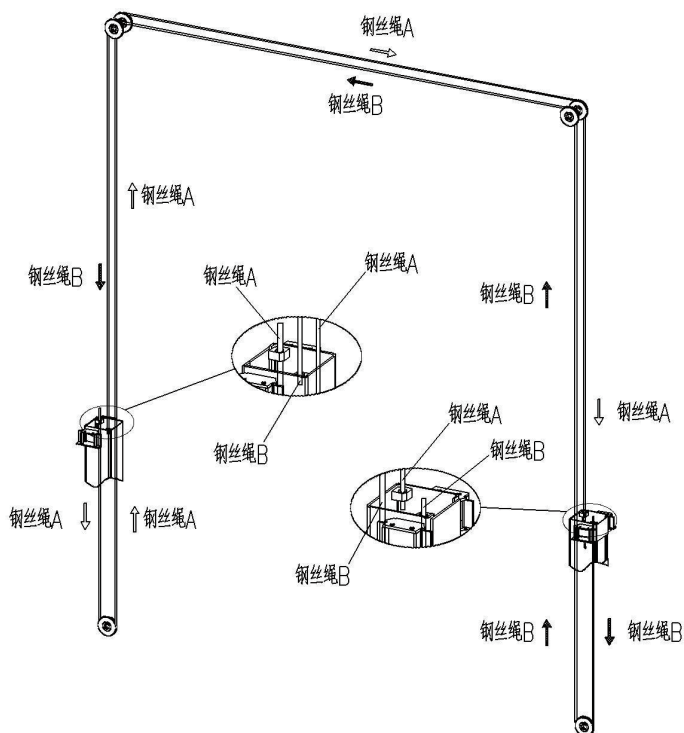


注意：如果拧紧膨胀螺栓的时候无法达到 203N.m，应该重新确认混凝土的强度。

- 安装车顶防撞限位杆，并连接好限位开。

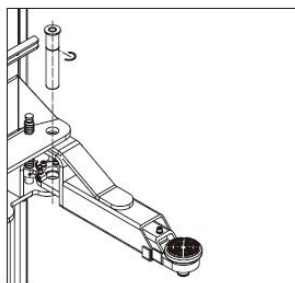
- 安装平衡钢丝绳

保证左右两边滑台在第一档保险处，将平衡钢丝绳按图示轨迹安装好。先不要拧紧螺母，等调试同步性的时候，再调整两根钢丝绳的松紧。注意：单边钢丝绳螺杆必须拧紧，调节时必须确保两边滑台锁在同一高度的锁上。

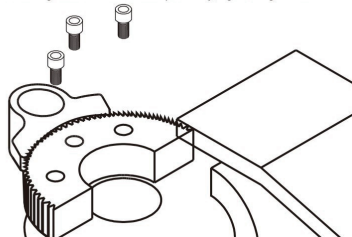


- 托臂安装

通过销轴将四个托臂装入滑台，前端用二节短臂，后端用二节长臂。（注意：车头方向使用二节短托臂，每个托臂轴需要装好卡簧）



当小齿跟大齿距离调整后，把大齿固定螺丝拧紧
After making sure the lock match perfectly, tightening the screws.



- 动力单元装配

将动力单元安装于主立柱电机板上，用螺栓螺母固定。安装好限位开关，连接电线。



- 液压系统连接

- a. 拧开油箱盖，倒入 10L---46# 抗磨液压油。（首选 46# 抗磨液压油，温度 -10° C 以下，考虑 32#）
- b. 连接好液压接头，将油管连接于主副油缸出口口接头处。

- 空载测试调整

- a. 清理场地，地面不可以有油污，举升机空载。
- b. 接通电源，按上升按钮，滑台上升，任意位置停止上升，按回油手柄，将左右滑台落入同档保险
- c. 拧紧平衡钢丝绳螺母，使两根平衡钢丝绳松紧度基本一致。
- d. 按上升按钮，使滑台上升一段距离，脱离保险，左手拉保险手柄，右手按回油手柄使滑台下降到最低处。
- e. 按上升按钮，全程举升，任意位置触动限位开关，电机停止运转，达到极限位置时溢流阀打开，液压系统回油，滑台停止上升，举升过程观察左右滑台托臂同步性，如果有明显差异，继续调整平衡钢丝绳螺母松紧达到左右滑台同步性。
- f. 安装车门防撞橡胶垫。

- 负载测试调整

- a. 将四个托臂完全打开，确保车道空间无任何障碍。
- b. 将汽车驶入举升机，左右居中，以立柱连线做参考，车辆前后放置距离比大致 2:3（前置发动机车辆），当车辆吨位大于 3.5 吨时，适当向后移动车辆。
- c. 将托臂托盘旋转至汽车底盘支撑点。
- d. 按上升按钮，托臂上升，确认四个托臂锁完全落锁。
- e. 继续点动上升，观察如果有任一橡胶托盘接触到底盘支撑点，停止上升，然后将余下的橡胶托盘逆时针旋转，与支撑点接触。
- f. 按上升按钮，汽车慢慢被提起，当汽车轮胎离地时，停止上升。轻推汽车尾部，确认汽车安全稳固，托臂锁完全落锁。
- g. 按上升按钮，汽车继续上升，观察汽车举升过程前后左右是否平稳，当滑台上升到第三或者第四档保险的时候，停止上升，按回油手柄，液压站回油，滑台落锁。观察汽车前后左右是否平稳。（如果左右高低差明显，则调节平衡钢丝绳螺母）。
- h. 继续上升至最高一档保险，停止上升，按回油手柄，回油落锁。观察举升机是否平稳无颤动。
- i. 点动上升，滑台脱离保险，左手拉住保险手柄，右手按回油手柄。汽车下降。
- j. 中间任意位置，松开左手手柄，保险自动回弹，滑台落锁，停止下降。
- k. 点动上升，滑台脱离保险，左手拉住保险手柄，右手按回油手柄，中间任意位置释放左手手柄，保险自动回弹，滑台落锁，停止下降。这样的动作循环三次以上，确认机械保险安全而可靠。
- l. 举升汽车过程中，观察是否有异响，钢丝绳与其它部件是否有摩擦干涉。



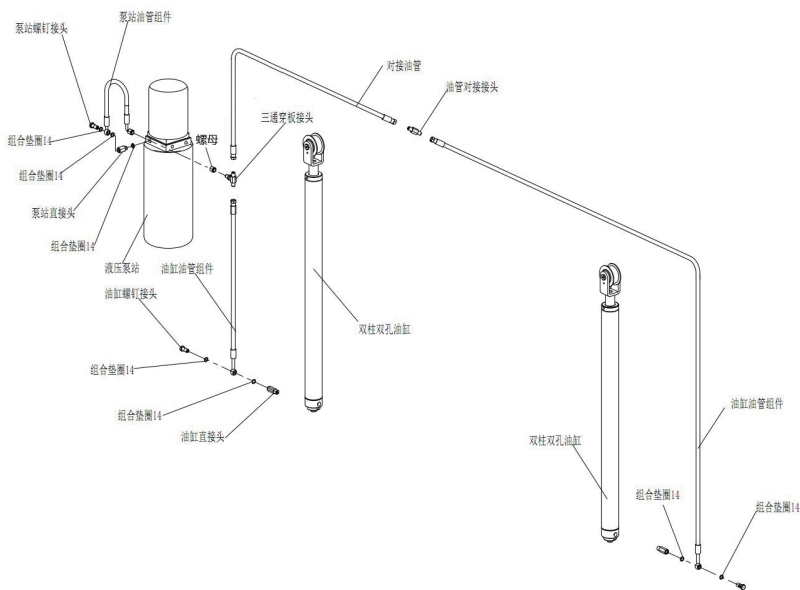
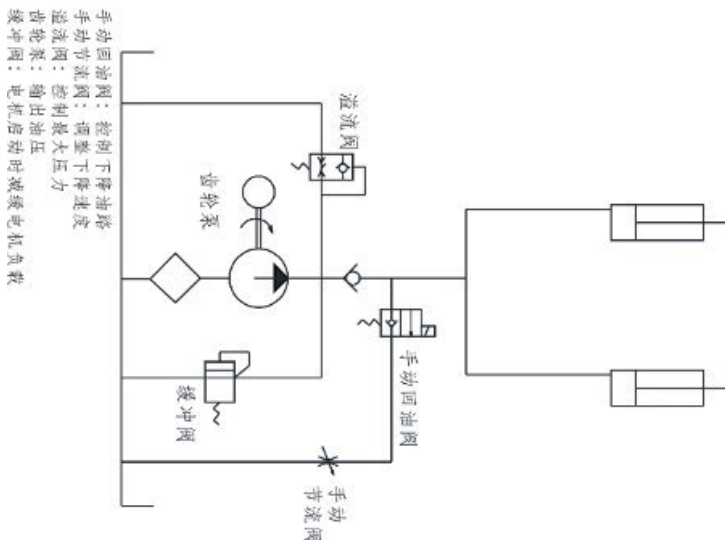
第五章 保养指导

- 每日检查项目
 - 检查所有液压接头，油管，油缸是否存在漏油。
 - 检查所有电气连接线是否有破损。
 - 检查所有运动部件是否有过劳磨损。
 - 清理橡胶托盘上的油污，观察橡胶托盘是否有过渡磨损。
- 每 2 个月检查项目
 - 更换立柱滑道内的润滑脂
 - 更换托臂销轴的润滑脂
 - 检查并锁紧膨胀螺栓螺母
- 每 6 个月检查项目
 - 更换链条钢丝绳润滑脂
 - 调节平衡钢丝绳，保险绳
 - 检查钢丝绳是否有毛刺
- 每 2 年检查项目
 - 更换液压油

第六章 常见问题

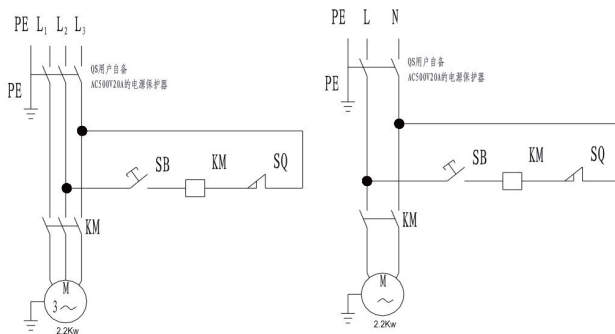
序号	常见问题	解决方案
1	按钮无法工作	更换按钮
2	接触器通电不吸合	更换接触器
3	接触器无法得电吸合	检查按钮与限位开关
4	液压系统连接处漏油	更换接头或者油管
5	油缸漏油	更换密封圈，严重者直接更换油缸
6	托臂齿啮合不好	调节托臂齿位置
7	保险绳松动	调整锁紧保险绳锁扣
8	平衡钢丝绳严重毛刺	更换钢丝绳
9	左右滑台无法落入同档保险	调整平衡钢丝绳螺母，使滑台同步
10	自动回油下降	更换回油阀或者下降调速阀
11	三相电机旋转不出油	电机反转，更换相邻两根电源相线（俗称火线）
12	三相电机异响无力	电机缺相，万用表检查电源进线 380VAC
13	负载情况下将速度过慢	检查回油阀，下降速度阀是否有异物堵住
14	工作时颤抖	立柱滑道涂刷润滑脂，检查液压站输出压力是否足够稳定，检查油缸活塞杆是否有爬升现象。（更换）

第七章 液压系统图、油管接法图



第八章 电气原理图

电源引入电机上的接触器进入端，并根据电器原理图与控制线相连，有限位开关的升降机还需要连接限位开关。连接电源需根据所购电机进行引入电源，必须依照当地或相关国家有关规定安装，并符合有关国家和地区的法律法规。

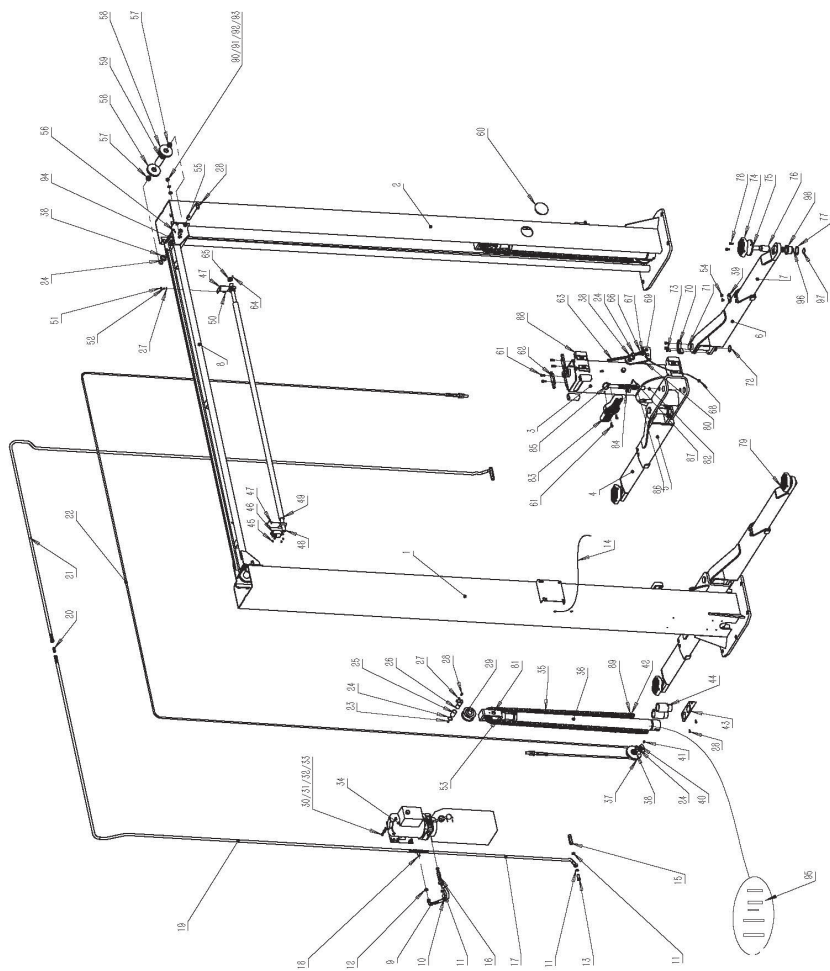


接线说明：

- 单相 220V 电机使用三线制铜芯电缆线（火、零、接地）线径 ≥ 4 平方毫米，电缆线长度不超过 5 米
- 三相 380V 电机使用四线制铜芯电缆线（火、火、火、接地）线径 ≥ 2.5 平方毫米，电缆线长度不超过 5 米
- 电机上的电源线是调试引导线，正式安装时，请将电源线直接接入交流接触器
- 外部电源线需要直接接入空开（空开规格 C63），不要用插座接线

注意：拆下液压站上电气盒的封盖并按电路图连线，要求升降机旁装有电源开关，以便维修和应急时切断电源。由于错误连线而导致的电机损坏不在质保范围之内。与电气连接有关的问题请与厂家联系。确保油箱里有油，不要在没有油状态下运行液压站。按上升按钮测试，如果马达未运行，或发生不正常的噪音及发热，此时应马上停机并检查电气连接是否正确。

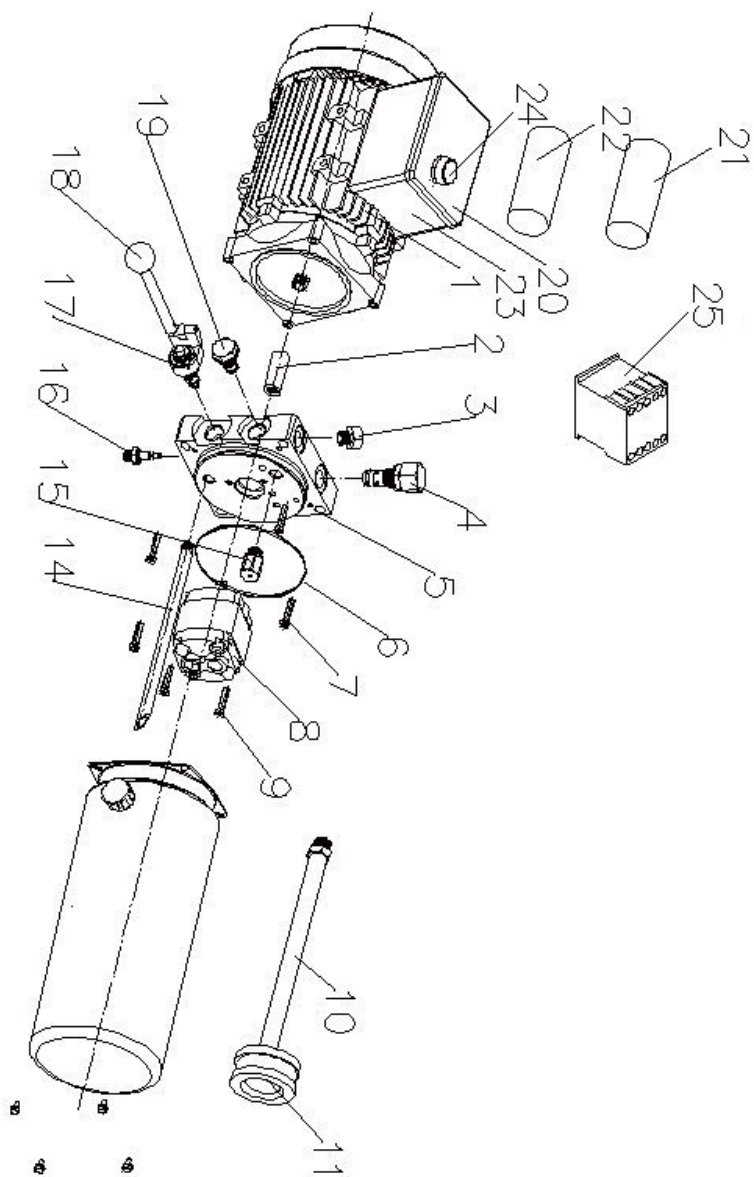
第九章 爆炸图



序号	世达编号	名称
1	PAE5105-201	主立柱焊接
2	PAE5105-202	副立柱焊接
3	PAE5105-203	滑台焊接
4	PAE5105-204	短托臂内管焊接
5	PAE5105-205	短托臂外管焊接
6	PAE5105-206	长托臂外管焊接
7	PAE5105-207	长托臂内管焊接
8	PAE5105-208	龙门焊接
9	PAE5105-209	泵站油管组件 L=450
10	PAE5105-210	泵站螺钉接头
11	PAE5105-211	组合垫圈 14
12	PAE5105-212	接头螺母 M14×1.5
13	PAE5105-213	油缸螺钉接头
14	PAE5105-214	限位开关电线 RW-2×0.75mm ² /L=3.5m
15	PAE5105-215	油缸直接头
16	PAE5105-216	泵站直接头
17	PAE5105-217	油缸油管组件 L=1220
18	PAE5105-218	三通接头 74° /M14×1.5
19	PAE5105-219	对接油管组件 L=3070
20	PAE5105-220	油管对接接头
21	PAE5105-221	油缸油管组件 L=6200
22	PAE5105-222	钢丝绳组件 L=10280
23	PAE5105-223	油杯 Φ8
24	PAE5105-224	轴用弹性挡圈 A 型 25
25	PAE5105-225	自润滑轴承 45
26	PAE5105-226	链轮轴焊接
27	PAE5105-227	平垫圈 6
28	PAE5105-228	内六角圆柱头螺钉 M6*12
29	PAE5105-229	油缸链轮
30	PAE5105-230	六角螺栓 M8*25
31	PAE5105-231	平垫圈 8
32	PAE5105-232	标准型弹簧垫圈 8
33	PAE5105-233	六角螺母 C-级 M8
34	PAE5000-3	铁壳电机动力单元 380V

序号	世达编号	名称
34A	PAE5000-2	铁壳电机动力单元 220V
35	PAE5105-236	链条 (123 节)
36	PAE5105-237	单孔油缸组件
37	PAE5105-238	绳轮 Φ 108
38	PAE5105-239	绳轮垫圈
39	PAE5105-240	固定挡板
40	PAE5105-241	绳轮挡片
41	PAE5105-242	外六角螺丝 M6*10
42	PAE5105-243	链条销轴
43	PAE5105-244	接套支架
44	PAE5105-245	托臂加高座
45	PAE5105-246	十字槽盘头带垫螺丝 M4×8
46	PAE5105-247	限位开关
47	PAE5105-248	限位杆支架 A
48	PAE5105-249	限位杆
49	PAE5105-250	限位杆护套
50	PAE5105-251	十字槽盘头螺钉 M6×16
51	PAE5105-252	六角螺母 -C 级 M 6
52	PAE5105-253	标准型弹簧垫圈 6
53	PAE5105-254	轴用弹性挡圈 A 型 20
54	PAE5105-255	内六角沉头螺钉 M8*12
55	PAE5105-256	龙门轴焊接
56	PAE5105-257	开口销 Φ 2.5*16
57	PAE5105-258	自润滑轴承 14
58	PAE5105-259	绳轮 (94)
59	PAE5105-260	绳轮隔离套 B
60	PAE5105-261	检视孔盖板
61	PAE5105-262	内六角圆柱头螺钉 M8x20
62	PAE5105-263	滑块座挡板
63	PAE5105-264	保险拉簧
64	PAE5105-265	内六角紧固螺钉 M6*5
65	PAE5105-266	固定环
66	PAE5105-267	内六角圆柱头螺钉 M8*40
67	PAE5105-268	保险压簧

序号	世达编号	名称	序号	世达编号	名称
68	PAE5105-269	保险钢丝绳组件	84	PAE5105-285	解锁齿
69	PAE5105-270	保险焊接	85	PAE5105-286	板式解锁轴焊接
70	PAE5105-271	托臂半齿	86	PAE5105-287	压簧 130
71	PAE5105-272	板式插销轴	87	PAE5105-288	弹性销 5*35
72	PAE5105-273	轴用弹性挡圈 A 型 38	88	PAE5105-289	滑块
73	PAE5105-274	内六角圆柱头螺钉 M10*20	89	PAE5105-290	开口销 \varnothing 2*25
74	PAE5105-275	六角托盘橡胶垫	90	PAE5105-291	六角螺栓 (全螺纹) M12*30
75	PAE5105-276	螺杆组件	91	PAE5105-292	平垫圈 12
76	PAE5105-277	螺套	92	PAE5105-293	标准型弹簧垫圈 12
77	PAE5105-278	轴用弹性挡圈 A 型 50	93	PAE5105-294	六角螺母 -C 级 M12
78	PAE5105-279	内六角圆柱头螺钉 M8*16	94	PAE5105-295	防脱轴
79	PAE5105-280	托盘装配组件	95	PAE5105-296	两柱油缸密封圈组
80	PAE5105-281	保险焊接组件	96	PAE5105-297	挡圈 24
81	PAE5105-282	油缸支架焊接	97	PAE5105-298	挡圈 35
82	PAE5105-283	轴用弹性挡圈 A 型 22	98	PAE5105-299	支撑座
83	PAE5105-284	防撞板			



序号	世达编号	名称	序号	世达编号	名称
1	PAE5105-300	2.2Kw 电机 (380V)	14	PAE5105-315	回油管
	PAE5105-301	2.2Kw 电机 (220V)	15	PAE5105-316	缓冲阀
2	PAE5105-302	联轴器	16	PAE5105-317	节流杆
3	PAE5105-303	堵头	17	PAE5105-318	手动下降阀
4	PAE5105-304	溢流阀	18	PAE5105-319	下降阀手柄
5	PAE5105-305	中间阀块	19	PAE5105-320	单向阀
6	PAE5105-306	油箱密封圈	20	PAE5105-321	电机盒带按钮 (380V)
7	PAE5105-307	电机固定螺栓		PAE5105-322	电机盒带按钮 (220V)
8	PAE5105-308	齿轮泵 2.7 (380V)	21	PAE5105-323	220V 电机启动电容
	PAE5105-309	齿轮泵 2.1 (220V)		PAE5105-324	220V 电机工作电容
9	PAE5105-310	齿轮泵固定螺栓	22	PAE5105-325	电机接线盒 (380V)
10	PAE5105-311	吸油管		PAE5105-326	电机接线盒 (220V)
11	PAE5105-312	滤网	23	PAE5105-327	接触器 (380V)
12	PAE5105-313	油箱固定螺栓		PAE5105-328	接触器 (220V)
13	PAE5105-314	油箱			



Chapter I Safety Precautions

- Make sure that you have read the User's Manual completely including relevant instructions on installation, operation and safety before operating the lift.
- Do not use the lift if any abnormality is found in the lift.
- Do not overload the lift [rated capacity: 4,000kg].
- Put the four bracket arms aside to ensure that the track is barrier-free before driving to the entry position. Do not kick the bracket arm as this may damage the bracket arm teeth.
- The lift can be operated by trained personnel only. The vehicle customer or the inexperienced person is prohibited from operating the lift at will.
- The rubber tray of the lift bracket arm must have contact with the support point of the vehicle; otherwise, the vehicle chassis may be damaged. [It is recommended to consult the vehicle manufacturer by telephone if the location of the support point is not clear.]
- Ensure that all bracket arm teeth are engaged successfully before lifting the vehicle.
- Always lift the vehicle with all the four bracket arms at the same time. Never lift the vehicle with less than 4 bracket arms.
- Be sure to perform mechanical locking after the vehicle is lifted. It is forbidden to work under the vehicle before mechanical locking is performed.
- The centre-of-gravity position of the vehicle may change when you install or remove any automobile component or push the vehicle forward and backward. To ensure safety, four independent brackets should be applied to improve the stability of the vehicle.
- Keep the area around the lift clean and tidy as any oil stain or obstacle may pose a safety risk.
- Never lift the vehicle with people in it.
- Make sure there is no obstacle under the vehicle before lowering it.
- Move the bracket arms back to original positions and ensure that they will not interfere with the vehicle before driving away from the lift.
- Do not remove any hydraulic component when the hydraulic system is under pressure.
- Do not put your hands at such dangerous positions as safety block, wire rope, gap between sliding table and post, chain, electrical connection, etc.
- Do not use the product outdoors as it is only suitable for indoor use.
- The short bracket arm is installed in the front while the long bracket arm is installed in the rear. (as most vehicles are equipped with front engine)
- The safety rope must be firm. When the safety handle is pulled, the safety blocks of the main and auxiliary posts must be opened completely and synchronously.
- Always wear safety shoes during operation.
- The whole machine is guaranteed for one year.



Chapter II Product Features and Parameters

2.1 Product Features:

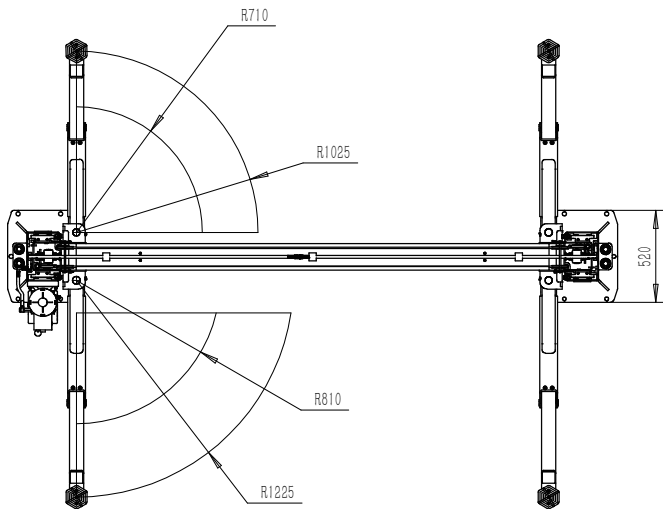
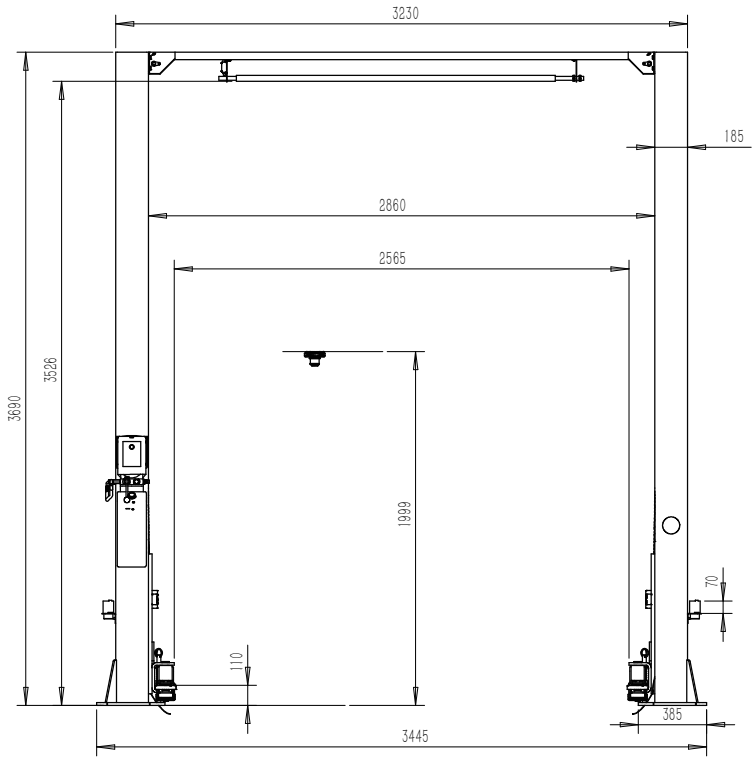
- 2 sections of bracket arms, suitable for a wide range of models
- Bilateral manual unlocking, safe and reliable
- Tray height adjusted by thread, with the adjustable height of 70mm
- Minimum lifting height of 110mm, suitable for low riders

2.2 Technical parameters:

Rated lifting capacity		4000KG
Inner width of the post		2860mm
Height of the lift		3690mm
Minimum lifting height		110mm
Tray adjustment height		70mm
Maximum lifting height		1999mm
Telescopic range of 2-section short bracket arms		710mm-1025mm
Telescopic range of 2-section long bracket arms		810mm-1225mm
Motor parameters	AE5105-3	3PH, 380VAC, 2.2KW, motor with iron housing
	AE5105	1PH, 220VAC, 2.2KW, motor with iron housing
Type of hydraulic oil		ISO 46# anti-wear hydraulic oil



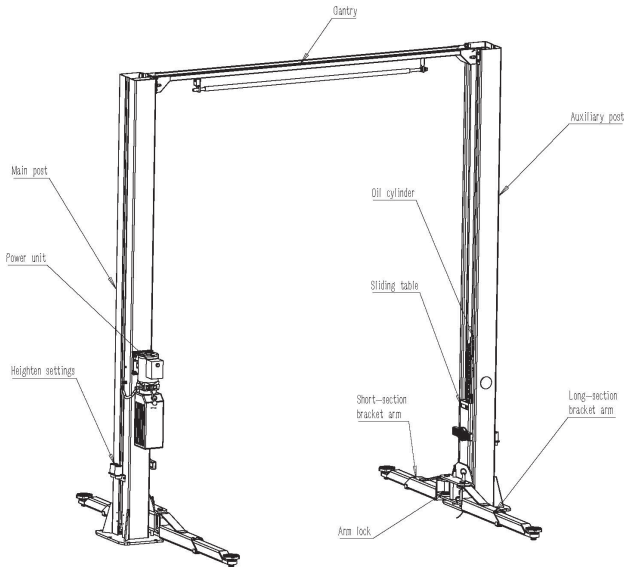
Diagram of product (unit: mm)





2.3 Description of main components

- This machine mainly consists of the main post, auxiliary post, sliding table, bracket arm, arm lock, bracket arm lock, mechanical lock, cylinder, power unit, gantry, etc. (See the figure below)



Post: Basic component, carrying sliding table, cylinder and other drive devices;

Sliding table: Lifting component, installed inside the post, sliding up and down;

Bracket arm: Lifting component, installed together with the sliding table, having contact with the support point of the vehicle to lift the vehicle;

Arm lock: Safety component, locking the bracket arm to prevent it from rotation

Cylinder: Drive component. When the hydraulic station pumps the high pressure oil into the lower chamber of the cylinder, the piston rod rises and drives the sliding table to rise;

Power unit: Power component. The motor drives the pump to suck oil via the filter strainer and pump high pressure oil

Gantry: Bridging component. The balance wire rope, oil pipe, and safety rope are arranged from the main post to the auxiliary post by way of the gantry, which also reduces the inward inclination of the two posts.

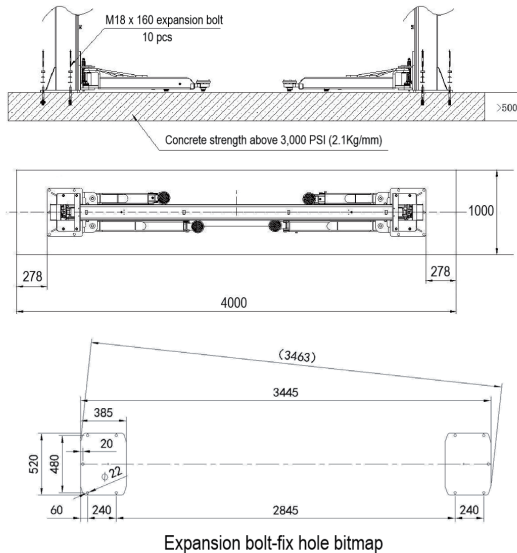
Chapter III Preparation for Installation

3.1 Unpacking

- Open the packing case, remove the surrounding packing materials, inspect the machine for damage during transportation, and inspect the main components and accessories for completeness as per the packing list. Keep packing materials away from children so as not to pose any danger, and properly dispose them if they may cause pollution.

3.2 Foundation

- The user has a responsibility to ensure the stability of the foundation. The concrete shall have a minimum thickness of 500mm and a minimum strength of 21MPa, and shall be properly prepared 15 days prior to the installation date. No other foundation equipment is allowed within 350mm of the expansion bolt to avoid degrading the foundation strength. The user has a responsibility to provide safe power, air source, and such connecting components as power wire.



3.3 Tools

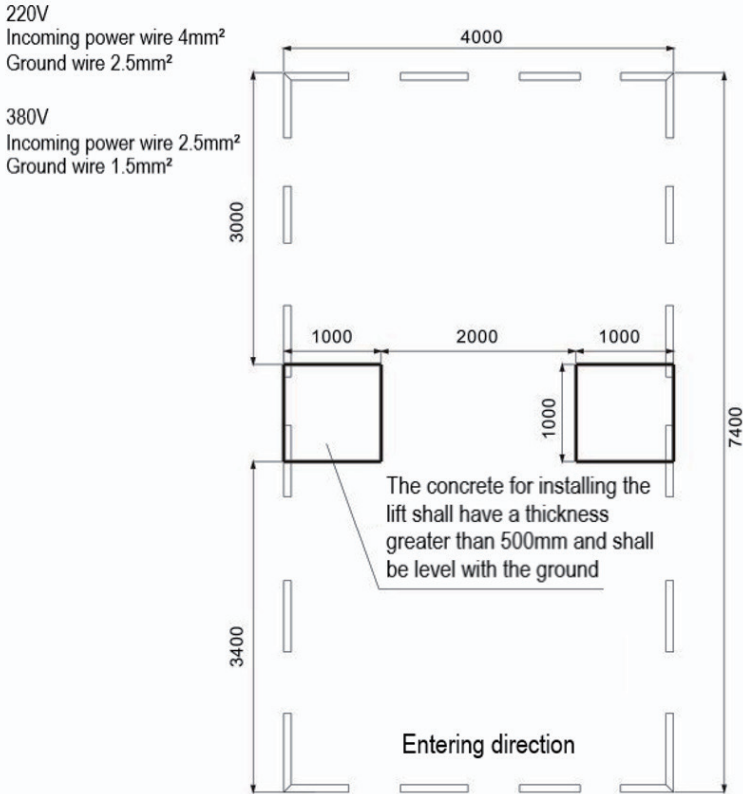
- 5m tape
- Chalk
- Proper impact drill and bit (expansion bolt M18X160mm)
- Hammer
- Proper wrench
- 1.2m spirit level
- Crowbar
- 4m ladder
- Proper screwdriver
- 100mmx100mm woodwork (for laying the post flat to protect the paint surface)



Chapter IV Installation Instructions

- Determine the mounting position, which shall be close to wall and power as much as possible.
- Thoroughly clean the mounting position of the lift, which shall be free from oil stains.
- The dimension diagram of mounting space of the product is given below for reference only.

Foundation diagram of the product

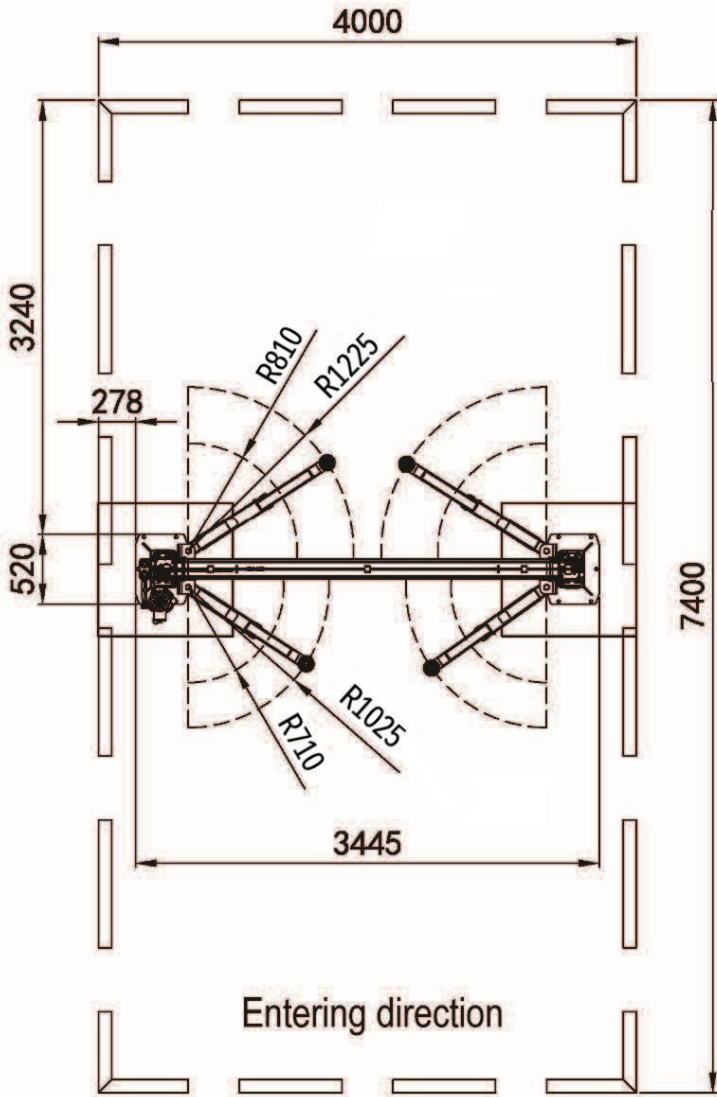


Note:

1. The concrete shall have a thickness greater than 500mm and a compressive strength not lower than 25MPa. The grade of the foundation concrete shall be greater than C25.
2. The lift station is recommended to have a length of 7,400mm.

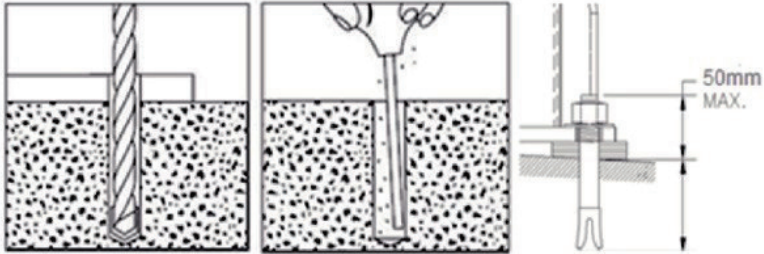


Schematic diagram





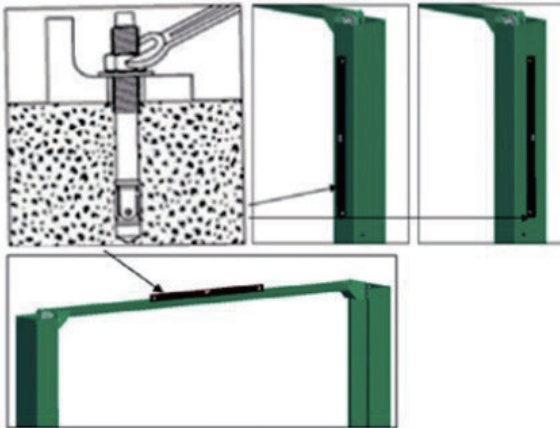
- Properly position the main post, drill holes with the impact drill, remove the dust in the bolt hole with a vacuum cleaner, and hammer the expansion bolt into the hole. The length of the expansion bolt protruding from the ground shall not exceed 50mm, and the nut shall not be tightened.



- Fix the auxiliary post by reference to the mounting method of main post, and check that the difference between the diagonal distances of the two post bottom plates is not more than 3mm.
- Prepare the ladder cart for the two posts respectively, fasten both sides of the gantry with slings, lift the gantry, and then install the connecting bolts.

Note: The irrelevant personnel shall be kept away from the lift during the installation of gantry.

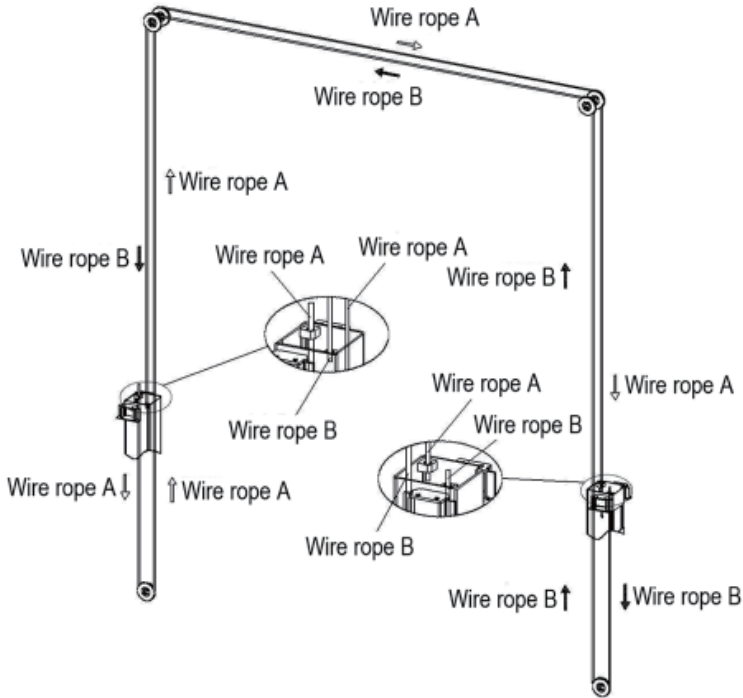
- Tighten the expansion bolts (reference torque: 203N.m), and meanwhile check that the post is vertical with a spirit level. Place the gasket at the bottom of the post to level the post if necessary. Check that the upper surface of the gantry is level with a spirit level.



Note: If the tightening torque of expansion bolt cannot reach 203N.m, the strength of concrete shall be rechecked. 4.8 Install the roof collision-prevention limit rod and connect the limit switch.

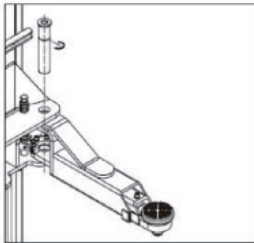
- Installation of balance wire rope

Make sure that the left and right sliding tables are at the first safety position, and then install the balance wire rope as per the track shown in the figure. Do not tighten the nut temporarily as the tension of two wire ropes will be adjusted for synchronization later on. Note: The screw rod for the left or right wire rope must be tightened. Make sure that the left & right sliding tables are locked at the same height during adjustment.

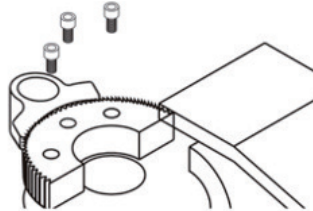


- Installation of bracket arm

Install four bracket arms into the sliding table through the pin, with three-section straight arms at the front end and two-section straight arms at the back end. (Note: Two short brackets are used in the front direction, and each bracket shaft needs to be equipped with a circlip.)



After making sure the lock match perfectly, tightening the screws.



- Installation of power unit

Install the power unit on the motor board of the main post and fix it with bolts and nuts. Install the limit switch properly and connect the wires.



- Connection of hydraulic system

- a. Unscrew the hydraulic tank cap and add 10L 46# anti-wear hydraulic oil. (46# anti-wear hydraulic oil is preferred; 32# anti-wear hydraulic oil is preferred at a temperature below -10° C)

- b. Connect the hydraulic joint and connect the oil pipe to the oil outlet joint of the main and auxiliary cylinders.

- Adjustment for no-load test

- a. Clean the site and check that there is no oil stain on the ground and the lift is unloaded.
- b. Power on the lift, press UP button to lift the sliding table and then stop at any position. Then, press the oil return handle to lower the left and right sliding tables to the same safety position.
- c. Tighten the balance wire rope nut to keep the tension of the two balance wire ropes basically the same.
- d. Press the UP button to lift the sliding table until it is out of the safety position, and then pull the safety handle with the left hand and press the oil return handle with the right hand to lower the sliding table to the lowest position.
- e. Press the UP button to lift the sliding table continuously (if the limit switch is triggered when the sliding table is at any position, the motor will stop). After the limit position is reached, the relief valve will open, the oil will return to the hydraulic system, and the sliding table will stop rising. Observe the synchronization of the left and right sliding table bracket arms during this process, and continue to adjust the tightness of the balance wire rope nut if significant difference exists.
- f. Install the door collision-prevention rubber pad.

- Adjustment for load test

- a. Fully put the four bracket arms aside to ensure that the track is barrier-free.
- b. Drive to the middle position of the lift, and keep the length ratio of the front part to the rear part of the vehicle (for those equipped with front engine) around 2:3 when the connecting line of the posts is taken as a reference. When the tonnage of the vehicle exceeds 3.5T, the vehicle shall be moved backward appropriately.
- c. Rotate the bracket arm tray to the support point of the chassis.
- d. Press the UP button to lift the bracket arms and ensure the 4 bracket arm locks are completely engaged.
- e. Continue to inch it up until a rubber tray has contact with the support point of the chassis, and then rotate other rubber trays counterclockwise to bring them into contact with the support point.
- f. Press the UP button to lift the vehicle slowly until all tires are off the ground. Gently push the rear of the vehicle to check that the vehicle is fixed firmly and the bracket arm locks are completely engaged.
- g. Press the UP button to continue lifting the vehicle and observe if the vehicle is stable during this process. Stop lifting the vehicle when the sliding table rises to the third or fourth safety position, and press the oil return handle, after which the oil will return to the hydraulic station and the sliding table will be locked. Observe if the vehicle is stable. (adjust the balance wire rope nut if there is an obvious height difference between the left side and right side of the vehicle).
- h. Continue to lift the vehicle until it rises to the highest safety position, and then press the oil return handle, after which the oil will return to the hydraulic station and the sliding table will be locked. Observe if the lift is stable without vibration.
- i. Inch the sliding table up until it is out of the safety position, and then pull the safety handle with the left hand and press the oil return handle with the right hand. after which the vehicle will descend. j. Release the safety handle when the sliding table is at any position in the middle, after which the safety lock will rebound automatically, the sliding table will be locked and stop descending.
- k. Inch the sliding table up until it is out of the safety position, pull the safety handle with the left hand and press the oil return handle with the right hand, and then release the safety handle when the sliding table is at any position in the middle, after which the safety lock will rebound automatically, the sliding table will be locked and stop descending. Repeat these operations for more than three times to verify the safety and reliability of the mechanical safety lock.
- l. While lifting the vehicle, check for abnormal sound and friction or interference between the wire rope and other components.



Chapter V Maintenance Instructions

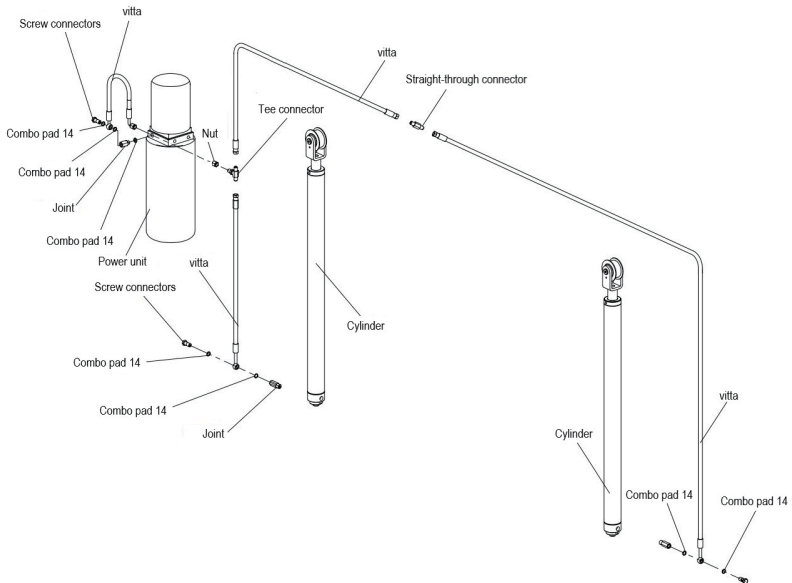
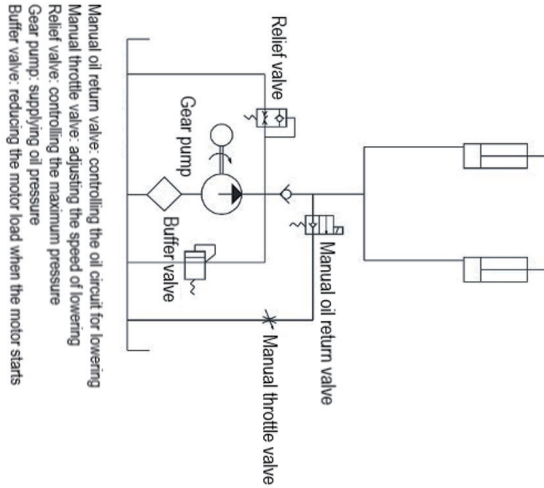
- Daily maintenance
 - a. Inspect all hydraulic joints, oil pipes, and cylinders for leakage.
 - b. Inspect all electric wires for damage.
 - c. Inspect all moving parts for excessive wear.
 - d. Remove the oil stains on the rubber tray and inspect the rubber tray for excessive wear.
- Maintenance after every 2 months
 - a. Replace the grease in the post slideway.
 - b. Replace the grease on the bracket arm pin.
 - c. Inspect and tighten the nut of expansion bolt.
- Maintenance after every 6 months
 - a. Replace the grease on the chain and wire rope.
 - b. Adjust the balance wire rope and safety rope.
 - c. Inspect the wire rope for burrs.
- Maintenance after every 2 years
 - a. Replace the hydraulic oil.



Chapter VI Common Faults

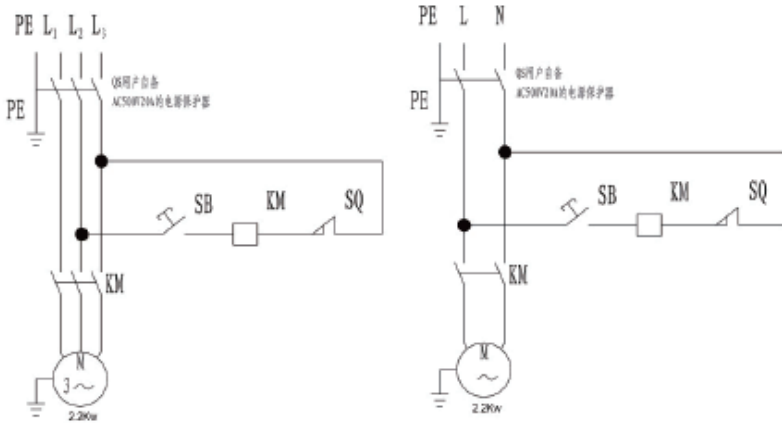
S/N	Common Faults	Solution
1	Button fails to work	Replace the button
2	Contactors fails to operate after energization	Replace the contactor
3	The contactor fails to be energized and operate	Inspect the button and limit switch
4	Oil leakage occurs at the connection of hydraulic system	Replace the joint or oil pipe
5	Oil leakage occurs in the cylinder	Replace the sealing ring, or replace the cylinder in the worse case
6	The bracket arm teeth do not engage well	Adjust the position of the bracket arm teeth
7	Safety rope gets loose	Adjust the latch to tighten the safety rope
8	Severe burrs appear on the balance wire rope	Replace the wire rope
9	Left and right sliding tables fails to fall to the same safety position	Adjust the balance wire rope nut to synchronize the sliding tables
10	Automatic oil return volume drops	Replace the oil return valve or lowering flow regulating valve
11	No oil is pumped out when the three-phase motor is working	The motor rotates reversely. Replace two adjacent power phase wires (commonly known as live wires)
12	Abnormal sound is heard in the three-phase motor, or the motor is powerless	Phase loss occurs in the motor, thus inspect the incoming power wire 380VAC with a multimeter
13	The lowering speed is too low when the lift is loaded	Inspect if the oil return valve and lowering flow regulating valve are blocked by foreign matters
14	The lift shakes during operation	Apply grease to the post slideway; inspect if the output pressure of the hydraulic station is stable enough; inspect the cylinder piston rod for climbing. (Replace it if any)

Chapter VII Hydraulic System Diagram and Oil Pipe Routing Diagram



Chapter VIII Electrical Schematic Diagram

The power supply is introduced into the contactor entry terminal on the motor and connected to the control line according to the electrical schematic, and the lift of the finite switch also needs to be connected to the limit switch. The connection power supply needs to be introduced according to the purchased motor, which must be installed in accordance with the relevant regulations of the local or relevant countries, and comply with the laws and regulations of the relevant countries and regions.

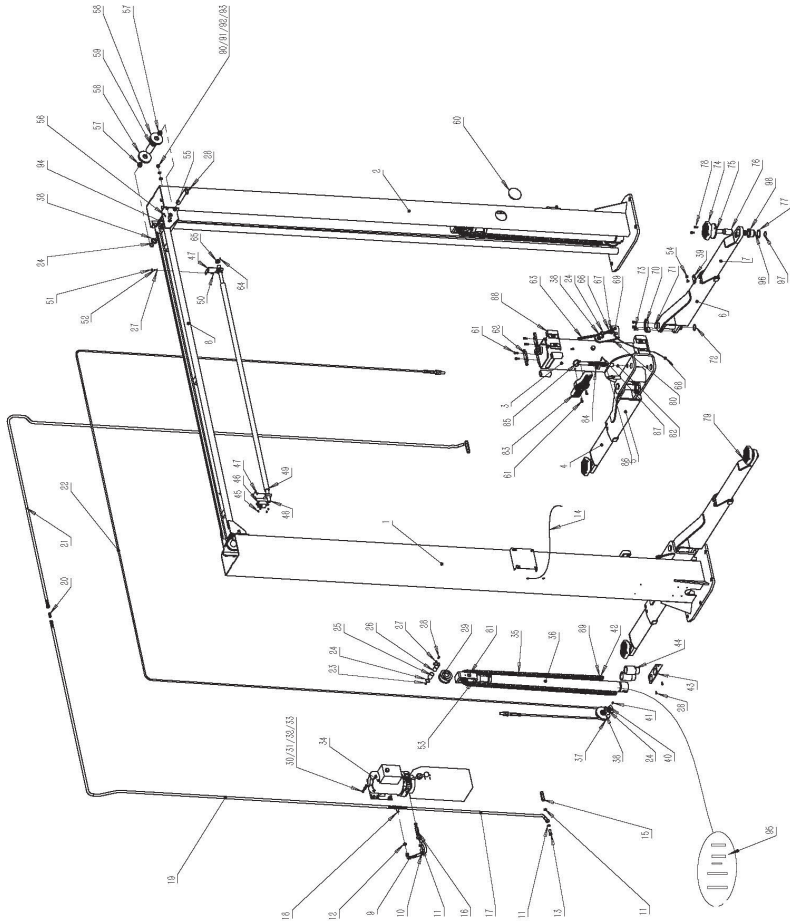


Wiring Instructions:

- Single-phase 220V motors use three-wire copper core cable (fire, zero, ground) with a wire diameter of ≥ 4 mm and a cable length of no more than 5 meters
- Three-phase 380V motors use four-wire copper core cables (fire, fire, fire, ground) with a wire diameter ≥ 2.5 mm, and the cable length of no more than 5 meters
- The power cord on the motor is a debug guide cable, when formally installed, please connect the power cord directly to the AC contactor
- The external power cord needs to be directly connected to the air-open (air-open specification C63), do not use a socket to connect the wire

Note: Remove the cover of the electrical box on the hydraulic station and connect it according to the circuit diagram, and require a power switch next to the lift to cut off the power supply in case of maintenance and emergency. Motor damage due to incorrect wiring is not covered by the warranty. For questions related to electrical connections, please contact the manufacturer. Make sure there is oil in the tank and do not run the hydraulic station in an oil-free state. Press the rising button to test, if the motor is not running, or abnormal noise and heating occurs, at this time should be stopped immediately and check whether the electrical connection is correct.

Chapter IX Exploded Views





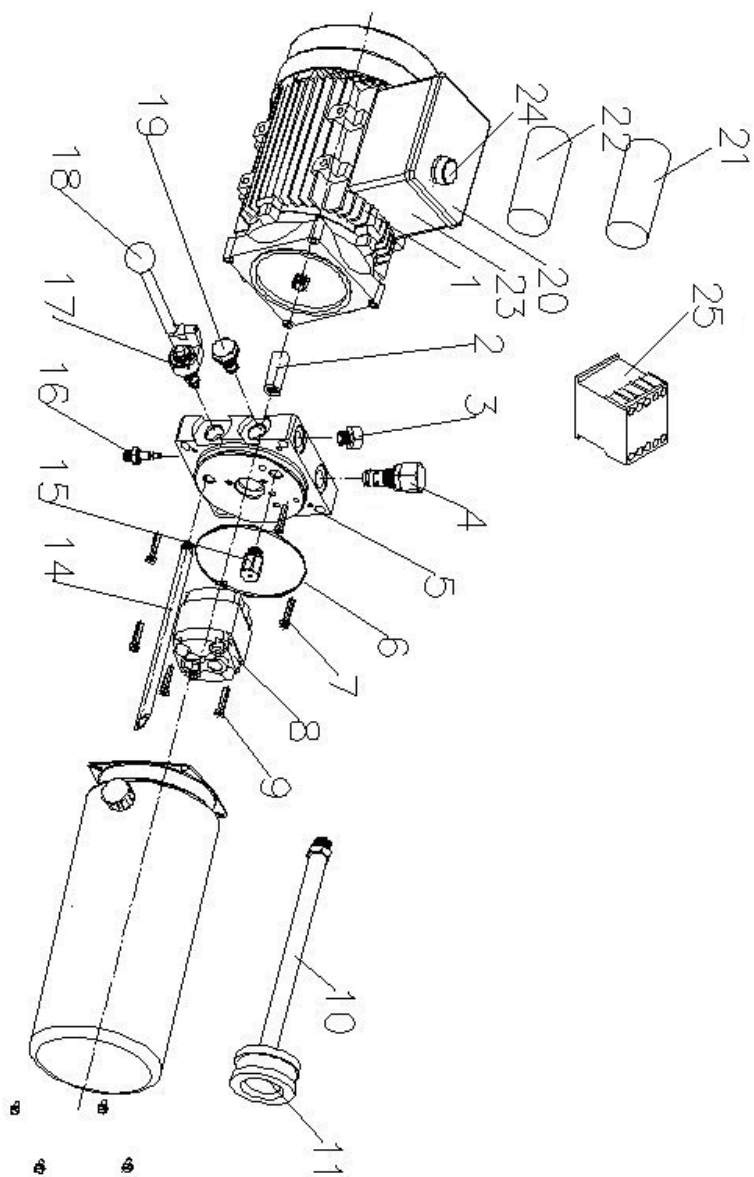
No.	Part No.	Name
1	PAE5105-201	The main column is welded
2	PAE5105-202	Welding of auxiliary columns
3	PAE5105-203	Slide welding
4	PAE5105-204	Welding of the inner tube of the short bracket
5	PAE5105-205	Welding of the outer tube of the short bracket arm
6	PAE5105-206	The outer tube of the long support arm is welded
7	PAE5105-207	The inner tube of the long support arm is welded
8	PAE5105-208	Gantry welding
9	PAE5105-209	Pumping station tubing assembly L=450
10	PAE5105-210	Pump station screw joints
11	PAE5105-211	Combination washer 14
12	PAE5105-212	Joint nut M14×1.5
13	PAE5105-213	Cylinder screw joints
14	PAE5105-214	Limit switch wire RVV-2×0.75mm /L=3.5m
15	PAE5105-215	Cylinder straight head
16	PAE5105-216	Pumping station straight head
17	PAE5105-217	Cylinder tubing assembly L=1220
18	PAE5105-218	Tee 74° /M14×1.5
19	PAE5105-219	Butt tubing assembly L=3070
20	PAE5105-220	Tubing butt joints
21	PAE5105-221	Cylinder tubing assembly L=6200
22	PAE5105-222	Wire rope assembly L=10280
23	PAE5105-223	Oil cup Φ8
24	PAE5105-224	Retaining ring A-type 25 for shaft
25	PAE5105-225	Self-lubricating bearings 45
26	PAE5105-226	Sprocket shaft welding
27	PAE5105-227	Flat washer 6
28	PAE5105-228	Hexagon socket head screw M6*12
29	PAE5105-229	Cylinder sprockets
30	PAE5105-230	Hexagon bolt M8*25
31	PAE5105-231	Flat washer 8
32	PAE5105-232	Standard spring washer 8
33	PAE5105-233	Hex Nut - C Grade M8
34	PAE5000-3	Power unit 380V



No.	Part No.	Name
34A	PAE5000-2	Power unit 220V
35	PAE5105-236	Chain (123 knots)
36	PAE5105-237	Single-bore cylinder assembly
37	PAE5105-238	Rope sheave Ø 108
38	PAE5105-239	Rope wheel washers
39	PAE5105-240	Fix the bezel
40	PAE5105-241	Rope sheave stops
41	PAE5105-242	Hexagon screw M6*10
42	PAE5105-243	Chain pins
43	PAE5105-244	Adapter bracket
44	PAE5105-245	Raise the arm
45	PAE5105-246	Cross groove pan head with pad screws M4 × 8
46	PAE5105-247	Limit switches
47	PAE5105-248	Limit lever bracket A
48	PAE5105-249	Limit lever
49	PAE5105-250	Limit bar sheath
50	PAE5105-251	Cross groove pan head screws M6 × 16
51	PAE5105-252	Hex Nut - C Grade M 6
52	PAE5105-253	Standard spring washer 6
53	PAE5105-254	Retaining ring A-type 20 for shaft
54	PAE5105-255	Hexagon countersunk screw M8*12
55	PAE5105-256	Gantry shaft welding
56	PAE5105-257	Cotter pin Ø 2.5*16
57	PAE5105-258	Self-lubricating bearings 14
58	PAE5105-259	Rope Pulley(94)
59	PAE5105-260	Rope sheave isolation sleeve B
60	PAE5105-261	Sight hole cover
61	PAE5105-262	Allen socket socket head screw M8x20
62	PAE5105-263	Slider seat bezel
63	PAE5105-264	Safety tension spring
64	PAE5105-265	Allen socket fastening screw M6*5
65	PAE5105-266	Retaining rings
66	PAE5105-267	Hexagon socket cylindrical head screw M8*40
67	PAE5105-268	Fuse pressure springs



No.	Part No.	Name
68	PAE5105-269	Fuse wire rope assembly
69	PAE5105-270	Insurance welding
70	PAE5105-271	Arm half tooth
71	PAE5105-272	Plate bolt shaft
72	PAE5105-273	Retaining ring for shaft type A type 38
73	PAE5105-274	Hexagon socket cylindrical head screw M10*20
74	PAE5105-275	Hexagonal tray rubber mats
75	PAE5105-276	Screw assembly
76	PAE5105-277	Screw sleeve
77	PAE5105-278	Retaining ring type A for shaft 50
78	PAE5105-279	Hexagon socket cylindrical head screw M8*16
79	PAE5105-280	Pallet assembly components
80	PAE5105-281	Safety welded components
81	PAE5105-282	Cylinder bracket welding
82	PAE5105-283	Retaining ring type A 22 for shaft use
83	PAE5105-284	Bumper plates
84	PAE5105-285	Unlock the teeth
85	PAE5105-286	Plate unlock shaft welding
86	PAE5105-287	Compression spring 130
87	PAE5105-288	Elastic pin 5*35
88	PAE5105-289	slider
89	PAE5105-290	Cotter pin \varnothing 2*25
90	PAE5105-291	Hexagon bolt [full thread] M12*30
91	PAE5105-292	Flat washer 12
92	PAE5105-293	Standard spring washer 12
93	PAE5105-294	Hex Nut - Class C M12
94	PAE5105-295	Anti-slip shaft
95	PAE5105-296	Two-column cylinder seal ring set
96	PAE5105-297	Retaining ring 24
97	PAE5105-298	Retaining ring 35
98	PAE5105-299	Support seat





No.	Part No.	Name
1	PAE5105-300	2.2Kw Motor (380V)
	PAE5105-301	2.2Kw Motor (220V)
2	PAE5105-302	Coupling
3	PAE5105-303	Plugs
4	PAE5105-304	Relief valve
5	PAE5105-305	Intermediate valve block
6	PAE5105-306	Tank seals
7	PAE5105-307	Motor fixing bolts
8	PAE5105-308	Gear pumps 2.7 (380V)
	PAE5105-309	Gear pumps 2.1 (220V)
9	PAE5105-310	Gear pump fixing bolts
10	PAE5105-311	Suction pipe
11	PAE5105-312	Filter
12	PAE5105-313	Tank fixing bolts
13	PAE5105-314	Fuel tank
14	PAE5105-315	Return line
15	PAE5105-316	Buffer valve
16	PAE5105-317	Throttle rod
17	PAE5105-318	Manual drop valve
18	PAE5105-319	Descending valve handle
19	PAE5105-320	Check valve
20	PAE5105-321	Motor box with button (380V)
	PAE5105-322	Motor box with button (220V)
21	PAE5105-323	220V motor start-up capacitor
	PAE5105-324	220V motor operating capacitance
22	PAE5105-325	Motor Junction Box (380V)
	PAE5105-326	Motor Junction Box (220V)
23	PAE5105-327	Contactor (380V)
	PAE5105-328	Contactor (220V)

适用型号 / Model: AE5105/AE5105-3

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世达汽车科技（上海）有限公司

SATA Automotive Technology (Shanghai) Co., Ltd

客户服务：上海市嘉定区南翔镇静唐路 988 号 5-12 幢

Customer service: Building 5-12, No. 988, Jingtang Road, Nanxiang Town, Jiading District, Shanghai

邮编 / Post: 201802

电话 / Tel.: (86 21) 6061 1919

传真 / Fax: (86 21) 6061 1918